TEXAS AGRICULTURAL EXPERIMENT STATION

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

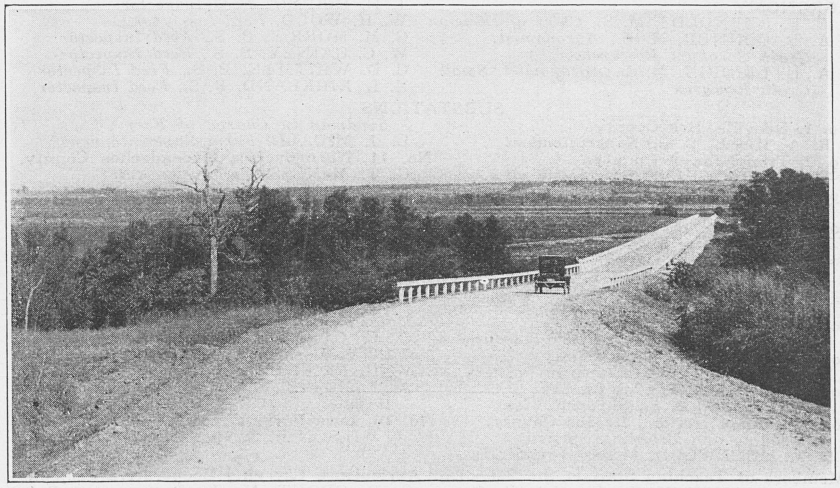
W. B. BIZZELL, President

BULLETIN NO. 327 February, 1925

DIVISION OF FARM AND RANCH ECONOMICS

AN AGRICULTURAL ECONOMIC SURVEY OF ROCKWALL COUNTY, TEXAS

A Typical Blackland Cotton Farming Area



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AN AGRICULTURAL ECONOMIC SURVEY OF ROCKWALL COUNTY, TEXAS

A Typical Blackland Cotton Farming Area

by

L. P. Gabbard

B. YOUNGBLOOD, DIRECTOR
COLLEGE STATION, BRAZOS COUNTY, TEXAS

ACKNOWLEDGMENT

The author wishes to acknowledge the financial cooperation of the Division of Land Economics and the Division of Agricultural Finance, Bureau of Agricultural Economics, United States Department of Agriculture, in collecting the data. He wishes especially to thank Dr. B. Youngblood, Director, for his encouragement and helpful suggestions from time to time during the progress of the study, and Dr. F. A. Buechel, Professor of Agricultural Economics, School of Agriculture, this institution, for his valuable assistance in reading and criticising the manuscript. He has also received valuable help from time to time in conference with a number of his co-workers on the Station staff. Mr. H. E. Rea, formerly an assistant in the Division of Farm and Ranch Economics, rendered valuable service in tabulating the data. Above all does the writer wish to express his appreciation to the farmers, bankers, business men, and other citizens of Rockwall County who cooperated in furnishing the information used.

FOREWORD

Up to the present time, the greater number of all the accomplishments of the research men working in our agricultural experiment stations have been in the field of the physical and the biological sciences. During the past few years, however, some of the stations have undertaken research of a new kind. Farmers and stockmen have long been interested in their marketing and other economic problems, local, state, and national, and the advent of studies in the field of the social sciences, particularly agricultural economics, is the result of the desire on the part of stockmen and farmers for such knowledge.

The present bulletin is the fourth issued by this Station in the field of agricultural economics. It reports an agricultural economic survey of Rockwall County, Texas, made under the personal direction of L. P. Gabbard, Chief of our Division of Farm and Ranch Economics. In this work he had the most earnest cooperation of the entire citizenship of Rockwall County. The survey comprises rather complete information from 500 farms out of a total of about one thousand in that county. The farmers seemed to be interested in the work because they desired scientific analysis of their economic condition. This bulletin should prove to be serviceable not only to the farmers of Rockwall County, but to others who wish to better understand their economic problems.

In attempting a new line of work of this kind, it is always well to begin with the survey, but the work should not end just here. The survey should be followed up with actual records and accounts on representative farms and carried through a sufficient number of years that any averages drawn may prove dependable. This, Mr. Gabbard is now doing on 25 farms in Rockwall and Collin counties and a competent man visits the farms with regularity to see that the records are properly kept. In due time these records will be studied and interpreted, and conclusions will be published as a bulletin of this Station.

If these studies prove helpful and profitable to farmers and others interested in agricultural economics, other studies of a similar nature may be made in other sections, covering different types of farming and stock-raising.

B. YOUNGBLOOD,
Director.

May 1, 1925.

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SYNOPSIS

This Bulletin is based on data secured by personal visits with 500 actual farm operators in Rockwall County, Texas, and is designed to cover the farm operations for the year 1922. The conditions herein described are offered as typical and representative of the blackland cotton farming belt.

This study deals primarily with the economic phases or business aspects of farming. It treats specifically such questions as land classification and land utilization, land tenure, size of farm, capital investment in farms, farm labor, farm income, farm credit, and the marketing of farm products. The treatment of these specific problems is prefaced by a discussion of the scope and nature of the study and a description of the area studied both as to its geographic features, and as to its historical settlement and development.

It was found that 90 per cent of the land in the farms studied was improved and of this 93 per cent was devoted to crops, of which cotton made up 67 per cent. Legumes were almost entirely lacking in the cropping system, while gardens, orchards, and pastures received very little attention, all of which indicates the lack of a well balanced farm program. The farms averaged 106 acres in size, while the typical group was found to be that from 50 to 99 acres. Small farms, or the group below 50 acres, showed little if any advantage over large farms in yield per acre, and a decided disadvantage in the production of a net income per farm. It is very evident from the facts gathered that this region has more to fear from farms becoming too small than from their becoming too large.

Ninety-four per cent of the investment in farm capital was composed of land and permanent improvements, while only 6 per cent was devoted to machinery and livestock. Four hundred and fifty out of 500 farms, hired labor, spending an average of $346.38 per farm for this item. The farmers interviewed reported loans for various purposes to the amount of $712,371.31 or an average of $1,111.34 per farm. This is slightly more than 9 per cent of the total investment in the farms surveyed and relatively small compared with other industries. Seventy-one per cent of the amount borrowed was used for buying land, while the remainder was used very largely for making a crop and living expenses. The size of farm and the net income per acre were found to be important factors influencing the net income per farm operator. The net income per acre on the other hand was found to be closely correlated with a number of factors of which the yield of lint cotton per acre was important. The regular method of selling cotton through the local buyer was the prevailing practice. In fact, the group of farmers visited were doing very little toward marketing their farm products cooperatively. The above isolated facts are in no way intended to give a summary of this survey but to illustrate concretely the nature of the facts treated. It is believed that such facts with their further elaboration as treated in this bulletin should be fundamental in planning future research, and in the development of more suitable agricultural programs.

CHAPTER I

THE SURVEY

ITS AIM AND SCOPE

It is asked, and everybody who is interested has a right to inquire, just what is meant by an agricultural economic survey—hence this word of explanation.

To begin with, such a survey concerns itself primarily with the economic phase, or business side of farming; some of the things we are constantly thinking about, reading about, talking about, and working at. More specifically, the survey aims to secure and analyze such facts as are available relative to questions of land utilization, land tenure, farm organization, farm income, farm credit, and the marketing of farm crops. In short, such a survey attempts to collect data and from their intrepretation to present the fundamental facts and conditions underlying the business of farming for a given type of agricultural enterprise. It is felt that if the economic features of these several distinct types of farming are ever developed, it must be done by a close study and analysis of each taken separately. Not that we hope to find new economic principles governing each of these groups, but that it is felt that the general laws of agricultural economics have a specific application to particular commodities which are characterized by similar conditions and common problems. The survey concerns itself first of all with conditions as they are and not as they ought to be. Nevertheless, such information should point the way to certain improvements, and suggest, in so far as possible, the remedies to be applied.

This survey deals with crop farming, and more specifically cotton farming in the blackland belt. Rockwall County was chosen as typical and representative of this region. Five hundred personal visits were made with as many actual farm operators and schedules filled out for each.

In this connection it would be well to arrive at an understanding of what constitutes a crop farm in contrast with other types of farming. Crop farming is here distinguished from other types of agriculture primarily by the nature of the products created. A crop farm is devoted to the production of cultivated crops for the market. In sharp contrast to it is the ranch, devoted primarily to the production of livestock, maintained chiefly on the native vegetation of the range. Another rather distinct type is that of the livestock farm, which is devoted both to the production of crops and of livestock. Livestock and livestock products are the principal products of such a farm and furnish a means by which the cultivated crops are marketed. More specific distinctions may be made and seem to be justified for purposes of detailed study and analysis. Crop farms, for example, may be divided into agronomic and horticultural, and these subdivided into the various kinds of crops, such as cotton, corn, wheat, tobacco, rice, sugarcane, orchard, truck, etc. Likewise all of the other general types of agriculture permit of a similar classification into specialized groups.

In this, and similar studies, the survey method is being used. We are

mindful of its limitations, and do not wish to claim too much for it. As has just been said, it only hopes to show what the economic situation is for a particular type of farming, restricted geographically to a definite area. A survey cannot hope to settle questions but it should and can raise them, uncover them, and point them out. It should help to define more accurately such problems as may exist. It should clear up the field for more specific research, and lead to more definite and purposeful action on the part of society.

In an effort to better utilize our land resources and to better organize and finance our farm operations, a number of problems must be met. In fact, it would be futile to try to find a time remote enough in the history of agriculture when those in the industry did not feel themselves confronted with serious problems. These problems have multiplied and become more acute, however, under our modern system of commercialized agriculture.

Who then, may we ask, is responsible for the ills to which the farmer feels himself a prey? What is the origin and cause of his difficulties? Has any person or group of persons consciously and deliberately organized against him? Are his troubles to be found within the industry itself, outside of it, or in a combination of both internal and external maladjustments?

The blame has been variously placed. At one time complaint is made against a class commonly known as middlemen; again it is the capitalist—big money interests; the railroads have come in from time to time to share in a large way their part of the blame, nor have the exchanges escaped without severe criticism. Simultaneously a number of remedies have been offered. Too often, perhaps, these proposed remedies have been political medicines prescribed for economic ills. Immediate relief instead of permanent cure has been too frequently the dominant policy of those who would save the farmer. Economic soundness should be the test for any remedy adopted. This test might well be applied to such proposals as the governmental control of prices, the cost of production plus a reasonable profit, an artificial increase in the supply of money, and the enactment of a general agricultural tariff which applies only in a few specific cases. This word of criticism is not intended to minimize the great good which has been accomplished through the many constructive agricultural measures of both our state and national governments. Neither is there any desire on the part of the writer to discredit the merits of any proposals which have been offered.

This study has no claims to justify or accusations to deny. It is made with the conviction that each type of agriculture has problems peculiar to itself, and that their most constructive solution is to be reached from a knowledge and understanding of underlying facts. It is an attempt to examine from within as well as from without for symptoms of our troubles. It does not hope to say the last word or to make the final observation, but it wishes to show, first of all, what the situation is, what forces are operating, to measure in a quantitative way the extent of their operation, and to indicate the direction of their movement. It is candidly felt that great good

will have been accomplished if through such studies an interest is created and a desire aroused in the farmer to know and do more about his own business.

RELATION OF THE SURVEY TO AGRICULTURAL ECONOMICS

A work of this nature lies within the field of agricultural economics. For this reason a brief discussion will be given in an effort to show the relation of this and similar surveys to the entire field, and at the same time point out the emergence and development of agricultural economics as a science.

The science of agricultural economics is comparatively new. Only recently have attempts been made to organize and systematize this body of thought into a separate science. Under a pioneer system of farming, when settlements were sparse, and land virtually free, where the farmer was both producer and consumer, economic relationships were simple and claimed but little attention. It was relatively easy under this domestic system of agriculture for the farmer to determine and satisfy the immediate needs of his family. The problem of disposing of a surplus did not exist. But with a growth in population resulting in a constantly increasing demand, inventions were made and machinery was gradually introduced in the factory and on the farm. From the very nature of the two industries, machinery was more rapidly and generally applied in the factory and consequently the difference between the two grew wider and wider. As a result, for many years much of the economic thinking and writing centered about and concerned itself with the problems of our big industries. The agricultural industry, aside from the problems of greater production, seems to have been taken for granted or largely ignored.

The modern economic phase of agriculture did not appear till near the close of the last century. No attempt will be made to account for all the factors influencing this development, but evidently the application of the physical and biological sciences in agriculture, rendering the industry more productive and less hazardous, coupled with and stimulated by a very marked commercial and industrial development throughout the country, contributed in a vital way. The transition from a self-sufficing to the modern commercialized system did not take place over night. It has developed gradually, and may be thought of as contemporaneous with the concentration of the industrial population in large cities, and with the settling of the western prairies, whose broad fertile acres were conducive to large-scale production. At least, it should be recognized that the viewpoint of the farmer has been fundamentally modified, if not completely changed while this transition was taking place. He no longer produces primarily for his household but for a market, and not only a domestic market, but quite often a world-wide market. Under this system it is profit rather than product he is looking for. The value or money aspect comes to occupy a very significant place in his operations. Physical product must be translated into value, measured by prevailing prices. Here the element of speculation enters in, and the need for adequate and dependable information

becomes more insistent. Both possible and probable prices must be considered. The price which the product will sell for and likewise the cost of the various factors entering into its production must be kept constantly in mind. This suggests the vital importance of forecasting, of projecting operations into the future, not upon the basis of present prices, but upon future anticipated prices, calculated by generally accepted statistical methods.

It should be understood that the recent emphasis placed on the economic phase of agriculture in no way discredits the use of the physical and biological sciences in this field. In fact, it should point to a broader use and a more practical application of them. A better knowledge of the conditions which confront the farmer can be gained only when the physical, biological, and economic forces with which he deals are studied and developed simultaneously. Dr. H. C. Taylor* says, "The physical and biological sciences, when applied to agriculture, have to do with the harmonious adjustment of the relations between the useful forms of plant and animal life and their physical and biological environment. Economics when applied to agriculture has to do with the harmonious adjustments of the relations between useful forms of plant and animal productions and their human environment; also between the various people who participate in the production, transportation and marketing of farm products." It is the function of the physical and biological sciences to furnish the technical knowledge covering the field and that of agricultural economics to select, combine, and apply this knowledge in such a way as to secure the maximum net returns to the industry and the maximum well-being to society and the nation.

No argument, then, is made for placing less emphasis on the technological processes of the industry; but a claim is made for an increased development of the economic phases. This will necessitate a decided expansion in the conception of what activities the industry should include. Evidently such a conception would no longer permit that agriculture be limited to the narrow sphere or lopsided aspect of the production of physical volume only. Over against volume must be placed value. The industry produces values by rendering certain necessary and essential services. It is just as much a function of the industry to see that cotton is properly ginned, baled, graded, insured, stored, transported, financed, and marketed in an orderly manner, as it is to plant, cultivate, and pick the crop. It means that a more liberal and enlightened view of the entire field of production should be taken. The product must be in a suitable form, in the proper place, at the right time and in the hands of those who have the keenest demand for it, if it is to bring its best price. All of the necessary steps taken and services rendered in bringing this to pass are productive. In one case it may be the act of assembling an economic unit for shipping, or on the other hand the service of furnishing sufficient and suitable credit for financing any or all

*"The Place of Economics in Agricultural Education and Research," by H. C. Taylor, Reasearch Bulletin No. 16, The University of Wisconsin, Agricultural Experiment Station, Madison, Wisconsin.

of the several steps which must be taken before the product is ready for the ultimate consumer. Just how far the farmer should attempt to go in rendering these services should be determined pretty largely by the nature of the product under consideration. In all events he must know whether or not it is an individual or group problem. Too often he attempts to do as an individual what has been demonstrated to be most economically performed by a group. The growing of farm products may perhaps be done best by individual units, the family farm, but the further necessary steps may be carried out most economically by an organization of growers interested in a common commodity.

In a discussion of this nature it is well to know that different viewpoints have been taken by nations relative to their economic policy in agriculture. While some have emphasized the state or national point of view others have placed the prosperity of the individual farmer in the foreground. At no time, however, has either of these policies been adopted and practiced to the exclusion or neglect of the other. It has been the policy of German economists, and that of their government as well, to defend the principle of national self-sufficiency. This policy found expression in their educational system, in their laws fixing high tariffs on agricultural products, in the creation of institutions providing ample facilities of easy credit, both long and short-time, encouraging thereby a high percent of land ownership among operators. France, in contrast to Germany, has placed emphasis on the prosperity of the individual farmer. Jouzier*, probably the leading exponent of the French point of view says, "Rural Economics is the branch of agricultural science which teaches how to organize the various elements which constitute the resources of the cultivator, whether in relation with one another or with respect to persons, in order to insure the greatest prosperity to the enterprise." The policy of the United States cannot be said to have taken a very positive and definite shape. There is evidence and hope for believing, however, that we have in the process of development a policy for agriculture as an industry which combines and merges both the individual and national viewpoints.

The economic problems of agriculture in the United States were first approached and studied from the individual isolated farm basis. The exponents of this movement were primarily technologists in the field of agriculture and not economists. Nevertheless, a great deal of credit is due this group for calling attention to a much neglected phase of agriculture and for stimulating further interest and study. Somewhat later a small group of students of general economics became interested in the special field of agriculture and proceeded to apply the principles of general economics to agriculture as an industry. This was a decided step for progress in the development of the science. But before general principles, taken from industries very largely urban, can be accepted and applied to an industry characteristically rural, much testing will have to be done. For this reason specific field studies are necessary. Research of this nature is car-

*Emil Jouzier, "Economic Rurale," J. B. Bailliere & Fils, Paris, France, 1920.

ried on with a view of perfecting our theory and improving our practice. By such methods it is hoped that true principles will be established, developed, and expanded, while unsound ones will be discarded.

At this juncture it should be explained that this study is one of a series. It is a continuation of the work begun by Dr. B. Youngblood and Dr. A. B. Cox in their recent publication, "An Economic Study of a Typical Ranching Area"*. The authors of this study present in a specific manner the extent and economic importance of ranching in Texas. Along with this a detailed, concrete, first-hand analysis is made of ninety-seven ranches in Sutton County. Every phase of ranching as a business is studied from the classification and utilization of land through to the marketing of ranch products, with considerable attention given to social conditions and institutions. This survey is being followed up by more specific studies which it suggested. The present study hopes to do no less for the crop farming interests of the blackland cotton belt of the State. It is hoped that such research may be continued for other sections of Texas. In the end we should have developed a body of knowledge which should be of much service as we go ahead in an effort to build a permanent and lasting agriculture.

*"An Economic Study of a Typical Ranching Area on the Edwards Plateau of Texas," by B. Youngblood and A. B. Cox, Bulletin No. 297, Texas Agricultural Experiment Station, College Station, Texas.

CHAPTER II

DESCRIPTION OF THE AREA STUDIED

GEOGRAPHIC FEATURES

In no industry is a knowledge of one's physical environment so important as in that of agriculture. Much of the progress which has been made thus far has been characterized by a continuous struggle of human beings to adjust themselves through crops and livestock industries to their physical surroundings. This adjustment is nothing more than a conscious or unconscious effort on the part of people to fit themselves into their surroundings so as to realize the greatest amount of satisfaction or profit from their situation. All economic activities and relationships are based upon and grow out of such human struggles.

To know that one owns a farm of so many acres has but little meaning till you are informed as to the exact nature of the physical forces and conditions which fix and limit the capacity and possibilities of those acres for agricultural production. This chapter will concern itself with the geographic features of Rockwall County and the surrounding region which influence the farming industry and farm life of its people. It will consider in a descriptive way those physical forces and materials which as a composite whole go to make up land. The atmosphere, the rainfall, the sunshine, and the wind must be present in the most favorable amounts if the various plant food elements of which the soil is composed are to find their maximum expression in the production of the greatest crop yields. It is true, the farmer will not go very far toward changing climatic conditions, but by being well informed in this regard he is better able to organize his farm and plan his operations so as to take the greatest possible advantage of such forces. He does have it in his power to influence very decidedly the conservation of his soils, and not only this, but by suiting his crops and practices to both his soils and climate, may materially increase his productive efficiency.

Location and Extent

Rockwall County is located in what is popularly called North Texas. Geographically it lies somewhat east of the north central part of the State. It is in the third tier of counties south of Oklahoma, and immediately south of the thirty-third parallel of latitude, and crossed about midway by the meridian of 96° and 30′ of longitude. It is about 150 miles west of the eastern boundary of the State, and about 250 miles from Galveston, the nearest point on the Gulf of Mexico.

Rockwall County has the unique distinction of being the smallest county in the largest state of the Union. It is rectangular, almost square, extending thirteen miles east and west and scarcely twelve miles north and south, having an area of approximately 152 square miles or about 97,280 acres. The mean elevation is slightly above 500 feet. There are no extreme variations in altitude. The lowest elevation, 390 feet, is at the point in the

southern county line crossed by the East Fork river, while the highest point, 620 feet, is in the north central part of the county just west of the town of Fate. The town of Rockwall, located on the hills overlooking the East Fork valley, has an elevation of about 600 feet. Royse City in the extreme northeastern part of the county has an elevation of 550 feet, while Chisholm in the southeastern part has an altitude of about 500 feet.

The surface slopes in a general way toward the south. All of the streams flow in a southerly direction with the exception of Camp and Squabble Creeks, which take a northwesterly course. For the most part, the drainage is good. In the more hilly regions the water runs off so rapidly that the slopes are badly eroded, while the low bottom lands along the East Fork of the Trinity river suffer from floods and overflows if not protected by levees. The East Fork of the Trinity river is the largest water course in the county, and meanders in a southerly direction with an irregular, tortuous course through its western part. This stream together with its tributaries drains the entire county with the exception of a small area along the eastern boundary which is drained by Sabine Creek. The main channel is narrow and varies in width from a few feet to fifty or sixty feet. The adjoining bottoms vary in width from one-half to two miles, and are 50 to 150 feet below the level of the bordering upland.

Topography

There is not a great diversity in the physiography of the county, yet enough to redeem it from the monotony of a level plain. In a general way the surface may be grouped into three natural divisions, viz: the **valley of East Fork**, the **western terrace**, and the **rolling prairie.**

Figure 1. Bottom lands in the East Fork Valley. The large pecan trees are remnants of a once dense forest of mixed growth of oak, ash, elm, bois d'arc, hackberry, blackwillow, cottonwood, mulberry, honey locust, etc.

The valley of East Fork extends across the western end of the county and is one to two miles in width. It is a flat basin with an elevation of 430 to 390 feet, and is subject to destructive overflows where not protected by levees. One levee reclaiming about 1900 acres of land has recently been

constructed and other districts are in the process of being organized for this purpose. The soils are alluvial, deep, and productive. The chief crops are cotton and corn. Vegetables and hay crops do well here when given a

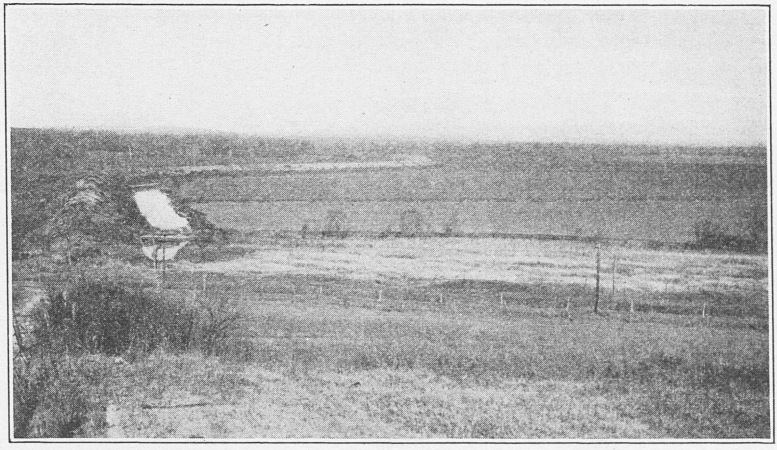


Figure 2. A levee reclaiming about 1900 acres of fertile alluvial soils in the East Fork Valley, near Rockwall, Texas.

chance. This constitutes the timbered area of the county. A report* of 1880 spoke of this area as being one to two miles wide, but since that time much of this timber has been cleared away and in many places only a fringe of trees along the banks of the stream remains.

The western terrace is a narrow, irregular strip about eight miles long and varying in width from one-fourth to one mile. It is immediately west of the East Fork valley, and has an elevation of 465 to 490 feet, or about 50 to 70 feet above the valley which it borders. The surface is gently undulating except for the slope to the edge of the bottom, which is unusually steep and quite often eroded. These soils, too, are alluvial but of a more remote deposit than the soils of the valley. They are very similar to the prairie soils and grow about the same crops—cotton, corn, oats, wheat, sorghum, etc.

The entire county east of the East Fork valley, or about four-fifths of its total area, belongs to the division known as the rolling prairie. It is about 150 to 170 feet above the valley, which it skirts on the west. The surface is undulating to rolling and hilly in the region of East Fork valley. The soils are for the most part black, stiff clays, belonging to the Houston and Wilson series, of which more will be said later. The chief crops are cotton, corn, oats, wheat, sorghum, and sudan. Buffalo and Bermuda grasses do well in pastures and furnish excellent grazing for the greater part of the year. Fruits do well on the eroded slopes of the hills along East Fork.

*Texas: Resources, Soil and Climate, Report of Commissioner of Statistics 1882, pp. 266-267.

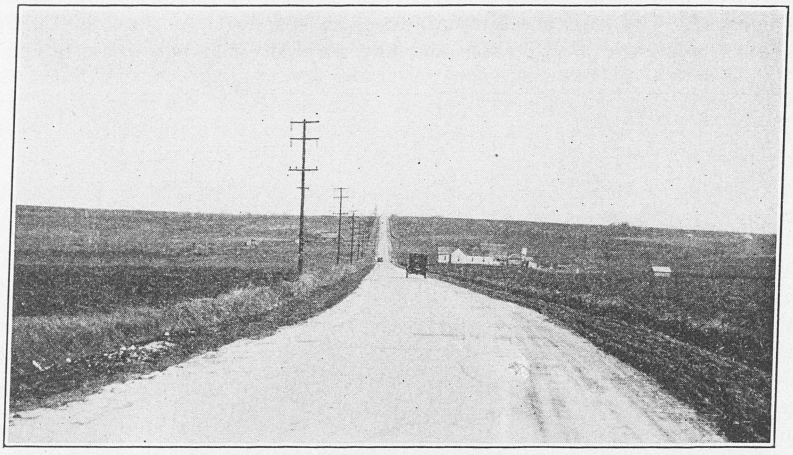


Figure 3. Typical topography of the rolling prairie, which occupies about four-fifths of Rockwall County.

Soils

Rockwall County lies in the Black Waxy Belt of the Costal Plains Province. This Black Waxy Belt is composed of two divisions, the Western, known as the Grand Prairie, and the Eastern, which includes Rockwall County and the belt in which we are here interested, designated as Black or Taylor Prairie*. This Eastern division extends in a southerly direction from the vicinity of Red River to that of San Antonio. It is a strip approx-

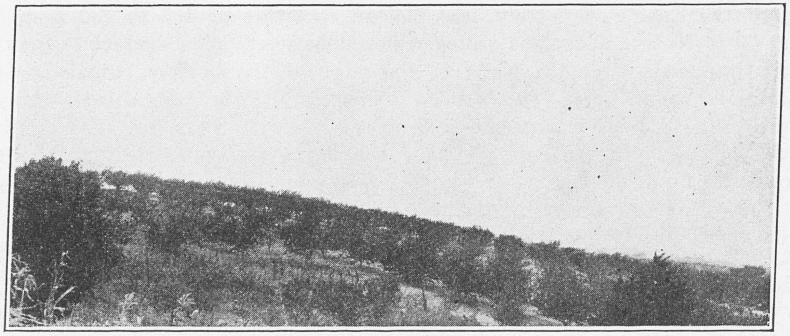
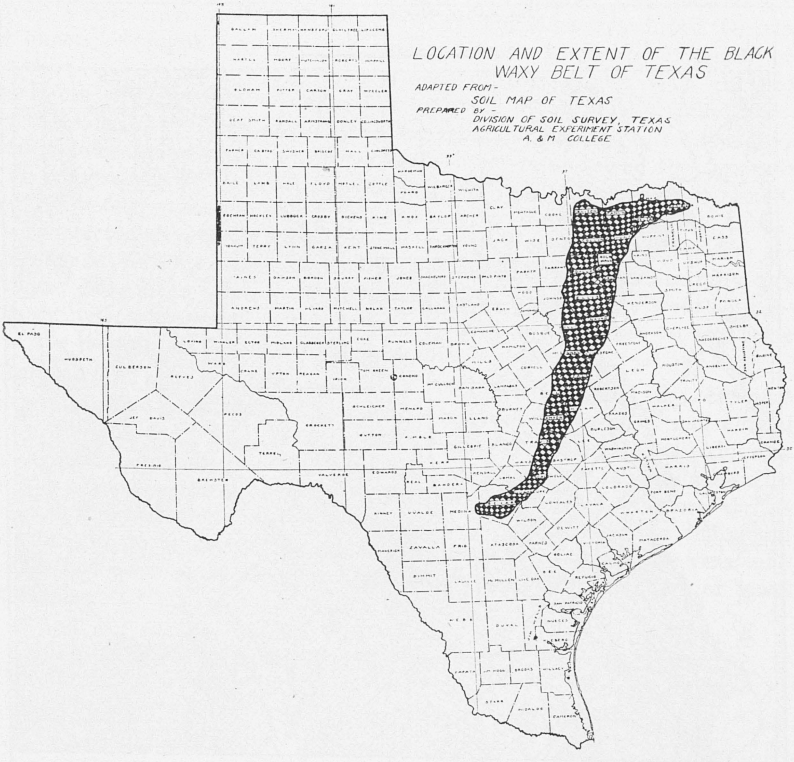


Figure 4. Orchard of J. A. Hanby on the hilly land overlooking the East Fork Valley. Mr. Hanby has been most successful in growing peaches, plums, grapes, and the cherry-plum or "compass cherry." Pears and apples he has found do only moderately well. He has gotten splendid results in budding improved varieties of persimmons on native stocks.

*Soil Survey of Rockwall County. (MS) by H. V. Geib (p. 63, 1922). Texas Agricultural Experiment Station and the Bureau of Soils, U. S. Department of Agriculture, cooperating.

imately 300 miles in length and averages 50 to 60 miles in width. It comprises all or a part of twenty-seven counties whose total area is almost 15,000,000 acres. While this is but 8.8 per cent of the total area of Texas, it might be of interest to know that since 1880 it has produced on an average of 43 per cent of the cotton of the State on about 43 per cent of the total cotton acreage of the state. This does not seem to indicate an advantage in yield, but it does show a very high concentration of cotton

FIGURE 5



acreage in this region. Further comparisons of area show this belt to be twice the size of Maryland, three-fourths that of South Carolina, and about equal in area to the state of West Virginia.

The soils of the county are strikingly uniform. Those of the rolling prairie are for the most part, if not entirely, derived from unconsolidated calcareous sedimentary strata and belong in the Houston and Wilson series. The alluvial soils of recent deposit in East Fork valley and along the streams tributary to it belong to the Trinity series, while the older, or terrace soils, are grouped under the Bell and Lewisville series. Almost without exception the soils are dark in color, varying from black to lighter shades of brown and gray. The soils are basically clay and very largely calcareous.

The subsoils are clay. There is very little siliceous material in them, so little that it would be indicated only by a chemical analysis. In the eastern part of the county the soils are brown to grayish in color and are known locally as "rawhide" lands. The surface soil here is lacking in lime, but a substratum of clay at the depth of two to four feet is darker in color and usually gives evidence of the presence of lime. All of the soils are residual with the exception of those alluvial soils found in the East Fork valley and its tributaries and in those of the western terrace.

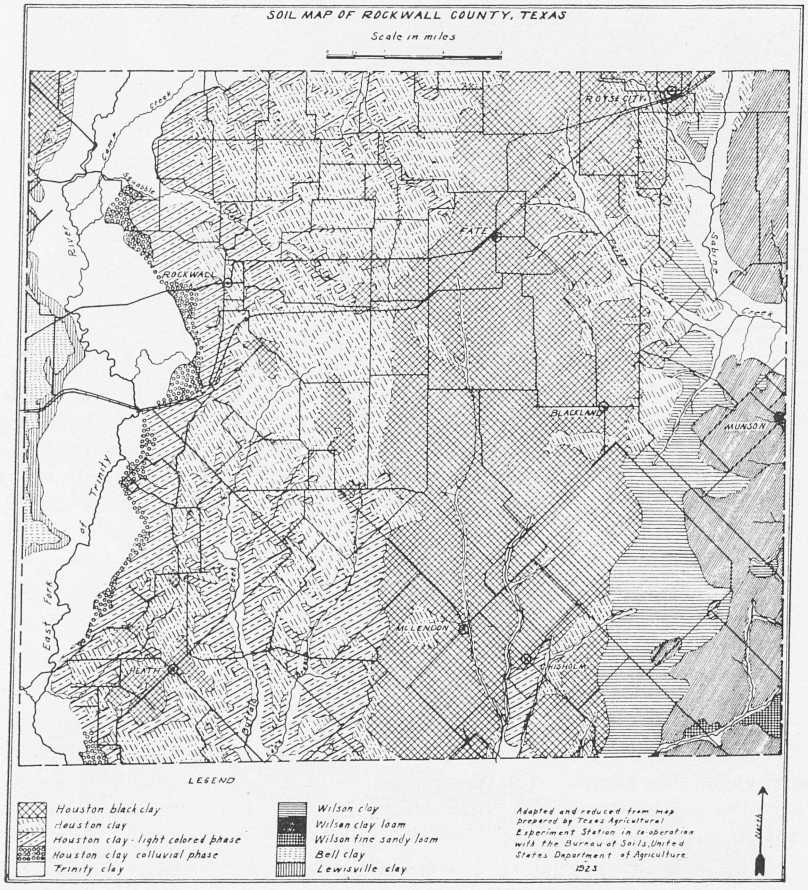


Figure 6. Location and extent of the different soils in Rockwall County.

Climate

Rockwall County is intermediate between the most humid parts of the state and the drier or almost semi-arid sections. For the most part, the climate is mild and healthful, but at best, inclined to be erratic and extremely variable. The winters are short, frequently interrupted by sudden

and marked depressions in temperature caused by cold north winds, locally known as "northers". The summers are long and subject to high temperatures, but on account of a rather low humidity and an almost constant breeze from the south, the heat is not so depressing as in lower and more humid regions. This section is to a certain extent subject to alternate wet and dry periods which materially reduce the maximum yield of the principal crops. As has already been pointed out, the soils are characteristically heavy clays; thus a soil which is seemingly well drained may become too wet for its maximum production because of prolonged heavy rainfall. On the other hand, a drought may produce similar results in yield. Probably no one natural factor with which the farmers of this region must contend causes more anxiety and uneasiness than that of rainfall. Quite often heavy rains in late winter or early spring retard planting; the same may be said of late spring rains, which wash the uplands and flood the lowlands making it necessary to do much replanting. In both cases the crops are retarded and rendered more liable to insect and dry weather hazards. Sometimes protracted dry spells occur in the fall and early winter, which not only render it difficult to seed small grain, but injure very materially any which may have been seeded. Fortunately these unfavorable weather conditions do not occur every year but they do happen and must be met as a part of the hazards of farming in this region.

Rainfall: Table 1 shows complete precipitation data for Dallas,* Texas, twenty-five miles west of Rockwall. It gives the monthly and annual precipitation for the years 1914 to 1922, inclusive. These data exhibit a fairly constant annual rainfall, yet the variations are wide enough to materially influence the production of agricultural crops. Of more significance are the variations shown from month to month for the individual years which go to make up this table. The total rainfall for the year may be ample but because of its poor distribution may fall far short of maximum results.

*These data on climate are given for Dallas because such records have not been kept for Rockwall. Dallas is 25 miles due west from Rockwall with an elevation of 512 feet.

FIGURE 7

ANNUAL PRECIPITATION AT DALLAS, TEXAS
FOR
1914-1922

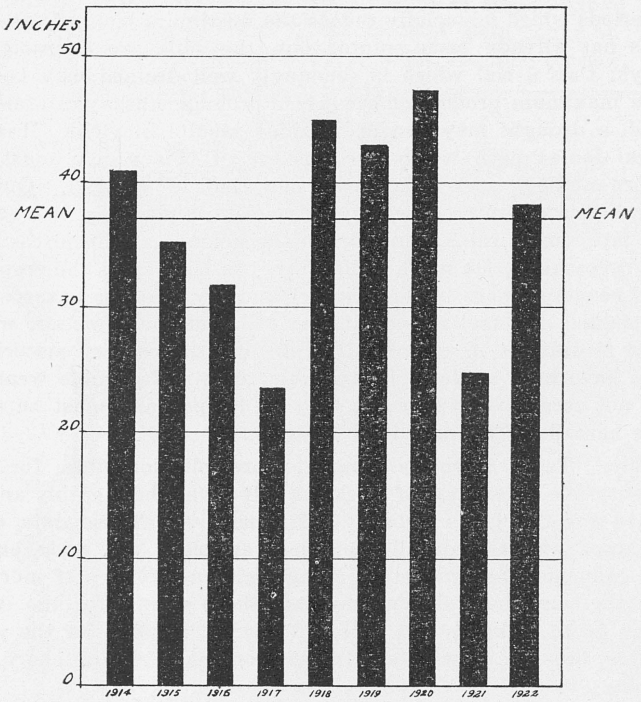


TABLE 1

Precipitation data for Dallas, Texas, for 1914 to 1922, Inclusive*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Mean	2.66	1.50	2.92	5.31	5.15	3.63	1.34	4.19	1.86	3.41	3.13	1.37	37.09
1914	1.06	2.08	4.09	5.69	7.10	2.85	1.09	6.30	2.09	0.35	4.80	3.43	40.85
1915	2.17	2.02	1.93	3.86	1.73	6.45	0.12	10.82	0.53	1.98	1.08	2.52	35.21
1916	5.88	T[2]	2.33	5.15	3.63	4.08	0.53	2.68	1.31	3.75	2.47	0.08	31.89
1917	1.00	1.31	3.40	5.24	3.25	0.46	2.35	2.67	1.90	0.11	1.99	0.04	23.72
1918	1.84	0.63	1.40	6.14	3.87	4.23	0.84	2.48	4.28	6.60	8.32	3.78	44.41
1919	1.80	2.29	2.97	2.55	4.38	1.42	3.30	4.62	3.89	10.94	3.79	0.48	42.43
1920	4.93	0.79	5.62	2.12	12.92	4.29	1.89	6.50	1.72	3.78	1.65	1.01	47.22
1921	3.15	1.97	2.75	3.97	2.78	5.68	0.63	1.12	0.32	0.34	1.19	0.67	24.57
1922	2.09	2.38	1.82	13.04	6.66	3.38	1.40	0.53	0.68	2.87	2.94	0.37	38.16

*U. S. Weather Bureau Records, Dallas Station, Dallas, Texas.
[2]Traces.

FIGURE 8

MEAN MONTHLY PRECIPITATION AT DALLAS, TEXAS
FOR
1914 - 1922

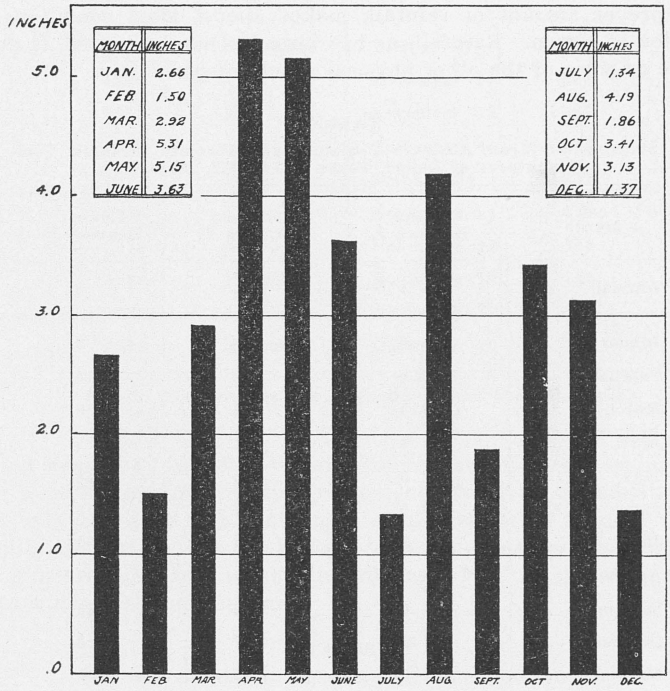


Table 2 showing the total snowfall per year, the number of days during the year on which it rains, is cloudy, part cloudy, and clear, at Dallas, Texas.*

TABLE 2

Year	Total snowfall in inches	No. of rainy days	No. of cloudy days	No. of part cloudy days	No. of clear days
1914	traces	95	109	133	123
1915	2.7	89	105	115	145
1916	0.1	69	101	125	120
1917	8.3	71	85	117	163
1918	9.8	67	92	112	161
1919	0.3	109	123	120	122
1920	0.7	94	107	129	130
1921	2.1	67	78	136	151
1922	1.0	97	104	126	135

*U. S. Weather Bureau Records, Dallas Station, Dallas, Texas.

Temperature: In table 3 the mean, absolute maximum, and absolute minimum temperatures are given for Dallas, Texas, 1914 to 1922, inclusive. It will be seen from these data that this region is subject neither to extremes of heat nor cold. The summers are long with rather high temperatures. The days are generally hot and the nights warm, which, coupled with a proper amount of rainfall, makes almost ideal conditions for the production of cotton. Rainfall, as has already been intimated, is not so dependable as some of the other physical requirements.

TABLE 3

Showing the Mean, Absolute Maximum, and Absolute Minimum Temperatures at Dallas, Texas, 1914-1922, Inclusive*

Month	Mean Degrees F.	Highest Degrees F.	Lowest Degrees F.
Annual	65.4	104	3
January	45.7	84	3
February	49.4	93	10
March	57.3	96	18
April	64.3	94	30
May	72.3	95	44
June	80.6	104	53
July	84.2	104	59
August	82.9	104	57
September	77.6	100	43
October	67.2	97	26
November	57.0	86	22
December	47.0	81	13

*U. S. Weather Bureau Records, Dallas Station, Dallas, Texas.

Table 4 relative to killing frosts shows the latest date in spring and the earliest in autumn on which frosts occur together with the length of growing season in days. Insofar as the principal crops are concerned, killing frost does not enter as a significant factor, since the length of the growing season is ample, but for those who are attempting to grow fruit it is of no little importance. The fruit crop is often destroyed by a late frost or by an early blooming of the trees before the danger of frosts has passed. I was informed by farmers that they expected the fruit to be killed by frost two years out of five.

TABLE 4

Killing Frosts*

Year	Latest date in spring	Earliest date in autumn	Length of growing season in days
1913	No record	October 27	244
1914	April 9	November 17	221
1915	March 22	November 15	237
1916	April 9	November 14	218
1917	March 5	October 24	232
1918	February 21	November 24	275
1919	March 5	November 13	252
1920	March 8	November 12	248
1921	March 29	November 20	235
1922	March 4	December 10	280

*U. S. Weather Bureau Records, Dallas Station, Dallas, Texas, 1914-22.

Wind Velocity: The wind velocity for this section is not so high as that farther west in the Great Plains region, but from an examination of the table it will readily be seen that there is sufficient wind to make the use of wind-mills practicable, but not enough to cause excessive evaporation. The region is not subject to violent wind storms. For the greater part of the year the winds are from the south.

TABLE 5

Wind Velocities at Dallas for 1914-1922, Inclusive*

Month	Prevailing direction	Maximum velocity of wind reached during month in miles per hour	Average hourly velocity of winds for the month in miles per hour
Total	South		9.3
January	North west.	41	9.4
February ...	South	55	10.0
March	South	58	11.6
April	South	51	11.3
May	South	54	9.9
June	South	62	8.9
July	South	45	8.3
August	South east.	49	7.9
September ..	South east.	44	8.0
October	South east.	42	8.2
November ..	North west.	44	8.8
December ...	North west.	47	9.0

*U. S. Weather Bureau Records, Dallas Station, Dallas, Texas.

Vegetation

This description must of necessity be brief. No attempt will be made to treat separately the great variety of grasses, weeds, shrubs, and trees found in this county. For the most part this discussion will be in the nature of a digest of a report* on the vegetation of Rockwall County recently made by H. Ness.

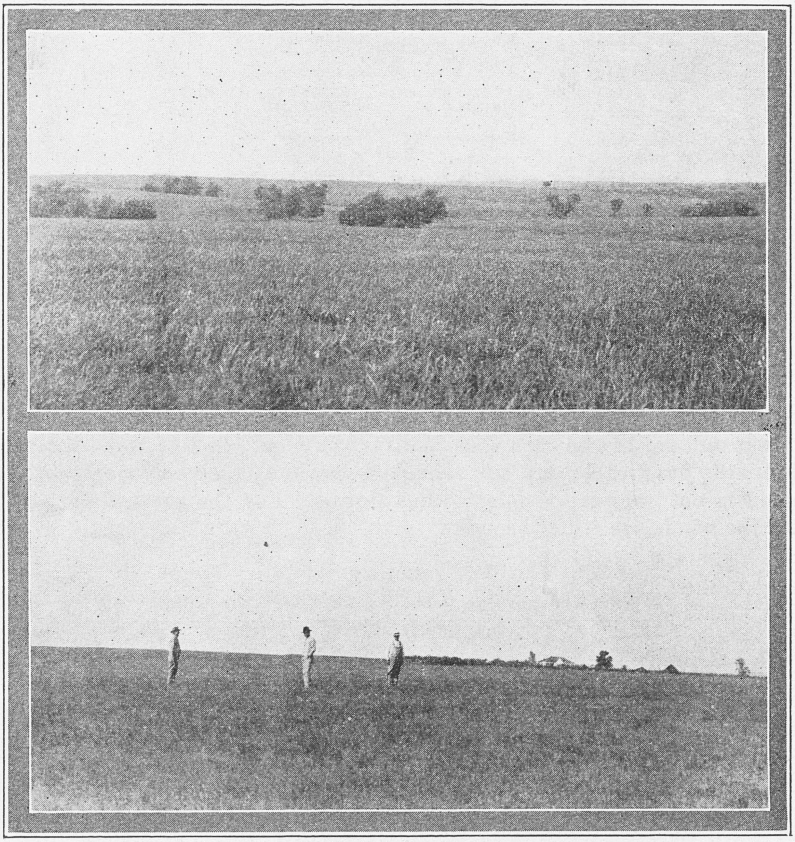


Figure 9. Native prairie utilized for hay production.

Top—Farm of D. H. Wallace, Rockwall, Texas. Mr. Wallace states that this native prairie has been used as a meadow for 42 years with an annual average yield of about one and one-third tons, produced at an average cost of about $3 per ton for cutting, raking, baling, and marketing.

Bottom—Farm of H. A. & W. B. Peck, Rockwall, Texas. This meadow has been mowed once each year since 1908. The average annual yield is estimated by Mr. H. A. Peck at one and one-fifth tons per acre, and the cost at $3 per ton. One of the most satisfactory features of the prairie hay meadow to the owners is that there has been virtually no loss from soil erosion, although the meadow is on rolling land.

*"A Short Survey of the Vegetation of Rockwall County." (MS) October 15, 1923, by H. Ness, Botanist, Texas Agricultural Experiment Station, College Station, Texas.

The original nature of the vegetation must have been that of a grassy prairie, interrupted by irregular wooded areas along the small streams and on the flood plains of the larger water courses, East Fork and Sabine. Cultivated fields of cotton and corn have almost entirely replaced this once solid prairie. Only a few small areas remain unbroken in pasture or meadow. From these remnants some idea of the original prairie vegetation may be obtained.

It was observed that the grazing of the pastures and the continued mowing of the meadows had tended to reduce the number of species of grasses, especially the annual forms. This was particularly noticeable in the small pastures of black waxy land. Here the Buffalo grass (Bulbilis dactyloides) locally called Mesquite grass, has survived and practically replaced all other native grasses. From an examination of the prairie meadow land made by Professor H. Ness early in October, 1923, the following grasses were found to be most abundant: the big blue stem (Andropogon furcatus), golden blue stem (Sorghastrum nutans), white beard-grass (Andropogon saccharoides), longleaved drop seed grass (Sporobolus longifolius) and tall gramma grass (Bouteloua curtipendula). The first two were most abundant and most valuable for hay. Buffalo grass was found in scattered patches underneath these tall grasses.

Bermuda grass is found distributed pretty generally throughout the entire county. The Report* of the Commissioner of Statistics for 1882, states: "Bermuda grass is being set to a considerable extent in many enclosures, and is found very valuable as pasturage." True enough, it is a valuable grass for grazing, but it is feared by the majority of farmers because it spreads so rapidly and is so difficult to eradicate. Where it invades cultivated fields and gardens it becomes a pest. On the other hand, there are low lands, particularly those lands in the creek and river bottoms which flood too often for crops to be profitably grown on them, which might well be sodded to Bermuda grass and utilized for grazing.

While speaking of grasses one should say more of Buffalo grass; not

Figure 10. Buffalo grass pasture. Note the presence of sheep and the absence of weeds.

*Texas: Resources, Soils, and Climate, Report Commissioner of Statistics, Etc., 1882, pp. 266-267.

because it is very generally propagated and used for grazing in this county, for it is not, but because of the splendid results which have been obtained where it has been given a chance. It is the ideal pasture grass for this region. When the taller grasses and weeds are held in check by grazing, especially weeds by sheep, it will soon cover the ground with a dense solid sod. It spreads rapidly both from seed and runners. These runners can live only on the surface and are rapidly killed when turned under. Buffalo grass is for this reason no menace to cultivation. Once it forms a sod it holds its own with ease against Bermuda grass. The few farmers who have tried have used it successfully as an outside border enclosing a Bermuda pasture to hold the Bermuda in check. It is drouth-resistant, more so than Bermuda; it can stand as much tramping and cold as Bermuda since its natural range extends from the prairie regions of Western Canada to the Gulf. It furnishes as good and as much grazing for all kinds of livestock, with the exception perhaps of hogs, as does Bermuda. It deserves consideration in every farm operation. These recommendations are based on the vegetation report mentioned above, personal observation, and the experience of a number of farmers in Rockwall County.

Johnson grass, Hurrah grass, (Panicum fuscum), and Crab grass are

Figure 11. Cultivated land badly infested with Johnson grass.

the most common weeds in cultivated fields. Cases are not infrequent where Johnson grass has so completely taken cultivated fields that the yield has been reduced to practically nothing. Often a good grade of hay may be made from such areas when mowed at the proper time. Such infestations are due very largely to careless, indifferent farm practices, and can only be remedied by proper cultural methods.

The most common weeds along the roadsides, which, for the most part, are allowed to grow and produce seed undisturbed are: Annual sunflower, Perennial sunflower, Giant ragweed, Western ragweed, Marsh elder, Common ragweed, Snow on the Mountain, and Broom weed. The last named weed is a troublesome pest in pastures. It is interesting to note, however, that on those pastures where a few sheep were grazed along with the other livestock this pest was not in evidence and the sod was greatly improved and the carrying capacity increased.

The flood plain of East Fork supports the principal growth of timber found in the county. Much of this timber has been cut and cleared away, but the large pecan trees which are scattered throughout the fields in the bottoms, as well as the growth of trees and shrubs along the stream and

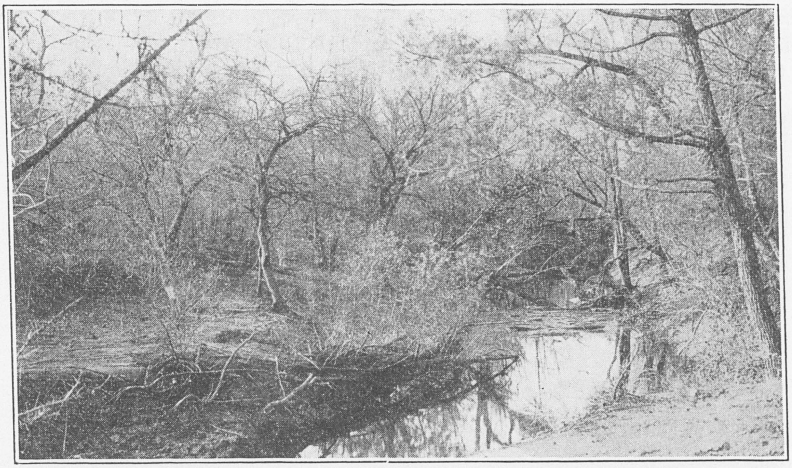


Figure 12. Narrow fringe of woodland along the banks of the East Fork River. This is the chief source of fire wood for many of the farm homes on the prairie.

other uncleared areas, give evidence of a once rank forest growth. The most common trees found are: burr oak, overcup oak, red oak, white ash, boxelder, slippery elm, corky-winged elm, cedar elm, bois d'arc, hackberry, black willow, cottonwood, pecan, mulberry, and honey locust.

It was from this forest that the early settlers obtained logs for the building of their cabins and rails with which to enclose their cultivated fields. It was then as it is today the chief source of the wood supply. Many of the farmers who live on the prairie own a small tract of 10, 20, or 30 acres in the bottom from which they secure their fire wood. When the prairie was rapidly being fenced with barbed wire the bois d'arc of this region furnished an abundance of the very best and most durable posts. In 1880 it was estimated that there was enough bois d'arc in East Fork valley to supply posts sufficient to fence the entire county into 20-acre lots. Practically none of this supply remains and no effort has been or is being made to replace or replenish it.

CHAPTER III

THE ORGANIZATION AND EARLY SETTLEMENT OF ROCKWALL COUNTY

ORGANIZATION

Rockwall County was created March 1, 1873, from a part of Kaufman County, and was organized April 23, of that same year. Kaufman County was organized in 1848 from a part of Henderson County, which was organized in 1846 from parts of Houston and Nacogdoches Counties. Both Houston and Nacogdoches Counties were organized in 1836 under the government of the Republic of Texas.

Both the town and county of Rockwall derive their name from the presence of a peculiar formation having the appearance of a rock wall. This wall extends several miles northeast and southwest from the vicinity of the town of Rockwall. There has been much local comment and con-

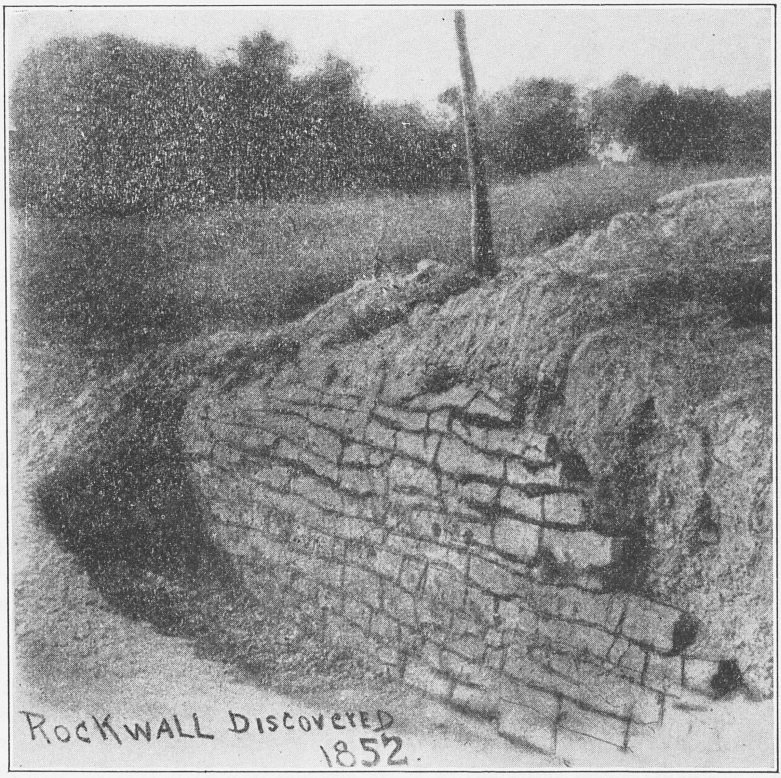


Figure 13. Showing a small section of the rock wall which suggested the name of both the town and county of Rockwall. (Courtesy R. A. Gaines, Editor, Rockwall Success).

jecture as to its origin. Some have ventured the fanciful opinion that it was built in ancient times by prehistoric man. Geologists explain it as a natural phenomenon, a formation due to a vertical faulting or cracking of the cretaceous rock. This crack, it is further explained, was immediately filled with moulten siliceous material, which upon subsequent cooling and hardening cracked into layers and blocks. The accompanying cut shows a small section of this wall as it appears when exposed.

POPULATION

Since Rockwall County was not organized till 1873 no record of its population seems to have been kept until 1880. A list* of settlers, or heads of families who resided in what is now Rockwall County just prior to the Civil War, totals 220. This would indicate that this area had a population of something like 1000 as early as 1860. During and immediately following the war no very rapid increase would be expected. The accompanying table shows the trend of population since 1880.

TABLE 6
Population of Rockwall County by years

Year	No. of Persons	Percent Increase or decrease for previous decade
1880.....	2,984	
1890.....	5,972	94.1
1900.....	8,531	42.8
1910.....	8,072	—5.4
1920.....	8,591	6.4

This table shows a decided increase in population for the period of 1880 to 1900. By 1900 a level was reached which has been fairly constant since. This would seem to indicate that by this time about all of the available agricultural land had been taken up and that the farms had become pretty definitely fixed in number and size. This static condition was disturbed slightly during the decade from 1900 to 1910. The U. S. Census data show a decrease in population of 5.4 percent for this period. This corresponds very closely in point of time to a period in which West Texas was experiencing an unusual development, which undoubtedly had a decided influence on the population of the older counties to the east.

The population of Rockwall County in 1920 was 8,591. Of this number about 25 percent were negroes, whereas in 1880 about 3 percent were negroes. The population is typically rural, and for the most part engaged in agricultural pursuits. There are no large towns in the county. Rock-

*List furnished by E. C. Heath, published in the Rockwall Success, Feb. 23, 1923.

wall, the county seat, and situated in the west central part, has a population of a little over 1,400. Royse City in the extreme northeastern corner of the county has a population of about 1,300. Fate with a population of about 200 is the next town in size. These towns are on the main line of the Missouri, Kansas, and Texas Railway, and form the leading trade centers and shipping points in the county. Munson, Chisholm, McLendon, and Heath are other small business centers.

TRANSPORTATION FACILITIES

The present development of railways and roads represents a marked progress to that of the 'forties' when a single trail, The Old Natoinal Road, passed through what is now Rockwall County crossing the East Fork of the Trinity River near the present site of Barne's bridge.

The main line of the Missouri, Kansas and Central Texas Railway, from Dallas to Greenville and Denison was built in 1886. This crosses the county in a northeasterly direction passing through the towns of Rockwall, Fate, and Royse City. The Texas Pacific Railway passed through Terrell and Forney in Kaufman County, not far from the south line of Rockwall County, as early as 1873. With the presence of these, very few farms in the county are more distant than 6 to 8 miles from a railroad.

The writer was informed that back in the early part of 1919, when the highway movement began to attract attention in the State, Rockwall County became interested and took the lead by voting bonds to the extent of $800,000. This was up to that time the largest amount of bonds voted for good roads by any one county in the State. The results of this progressive action are very evident.

Figure 14. Bankhead Highway leading west out of Rockwall across the East Fork Bottom.

The Bankhead Highway, a concrete road, was completed in 1922. In a general way it parallels the railroad. It is a part of the highway which crosses the State from Texarkana to El Paso by the way of Greenville and Dallas. This puts Rockwall County in close touch with the largest business

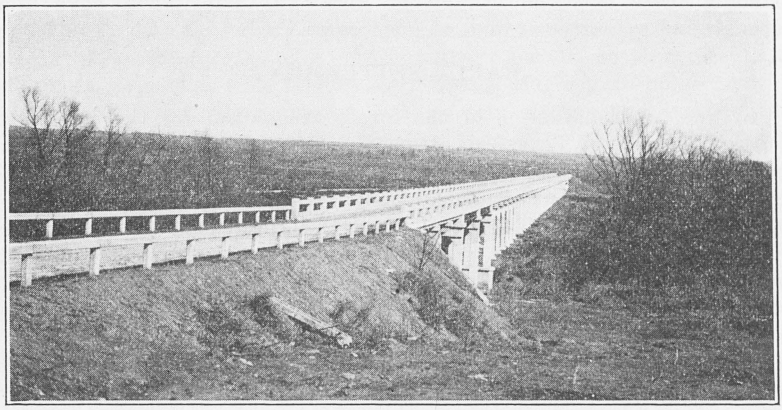


Figure 15. Concrete Viaduct crossing the East Fork River near Rockwall, Texas.

centers of the Southwest. An outstanding feature of this road is the concrete viaduct crossing the East Fork of the Trinity River. It extends from the levee on the east side of the river to the high bank on the west side, providing an ideal crossing, especially in times of high water. Another concrete road is under construction from Rockwall south to the Kaufman

Figure 16. Single track concrete road in Rockwall County. These roads are 8 feet wide and built at a cost of slightly above $11,000 per mile. This makes it possible to build many more miles of road on a limited amount of money than would be possible were a standard road built. By this policy many more farmers are reached. (Courtesy Portland Cement Association).

County line by way of McLendon and Chisholm. A third and similar road is under construction south from Royse City joining this second at Chisholm.

In addition to these concrete highways approximately 50 miles of road have been graded and concrete bridges constructed. When the program of surfacing these has been completed Rockwall County will have a very thorough and extensive system of good roads.

EARLY SETTLEMENT

In this brief discussion of the forces accounting for the early settlement of this part of Texas, no attempt will be made, even though it were possible, to give all of the details. Attention will be called only to the more immediate and apparent influences contributing to the movement of emigrants westward into this region. The chief reason for such a treatment in a study of this nature is the hope that it will serve as a background, leading in a degree at least, to a better understanding of present conditions and problems. It is felt that in order to properly account for and accurately analyze present conditions, one should know not only present underlying facts, but also the facts, traditions, customs, and conditions out of which the present has developed and upon which it rests.

History* tells us that Clarksville on the Red River was the most westerly town of any note in this region in 1840. There were at that time a few scattered settlements farther west in Lamar and Red River Counties. These were located principally along water courses. By this time the Indians had been pushed farther west and were located at Village Creek between Fort Worth and Arlington and higher up the Trinity and Red Rivers. We are told that they were friendly at first, but, as the settlers came in increased numbers, became concerned about the encroachment upon their hunting grounds and grew morose and sullen. Be this as it may, we know that the pioneers in the early 40's who first attempted to settle in Collin, Denton, Cooke, Tarrant, and other counties to the north suffered heavy losses both in lives and property from the frequent raids of these Indians. These ravages, however, were of short duration. By 1845 the frontier from the Red River to the Colorado was guarded by ranging companies which gave protection and made it possible for the country to the east and interior to be settled with little fear of being molested.

The Coming of Early Settlers: The early settlers of this region came very largely from the older Southern states to the east, principally from Tennessee, Kentucky, Georgia, Alabama, Mississippi, Virginia, and the Carolinas. They were mainly of Scotch, Irish, and English descent, and undoubtedly were very similar in type and characted to their ancestors who had crossed the Alleghanies a century before with the hope of bettering their conditions on this side of the barrier.

Evidently a number of forces have always operated to induce pioneers to quit the protection and safety of organized community life for the

*Dudley G. Wooten, "A Comprehensive History of Texas," William G. Scarff, Dallas, Texas, 1898; Vol. I.

hazards and hardships of the border. The love of adventure, the freedom of the frontier, have appealed in no small way, but the lure of an abundance of good free or cheap land has been the common force pulling and compelling this fresh stream of emigrants onward from frontier to frontier. Ramsey* in speaking of the early settlers who crossed the Alleghanies, says, "The facility for taking up choice lands of the country induced great numbers of presons, principally those without means, to emigrate to the frontier. A poor man with seldom more than a single pack-horse on which the wife and infant were carried, with a few clothes and bed quilts, a skillet, and a small sack of meal, was often seen wending his way along the narrow mountain trace, with a rifle upon his shoulder—the older sons carrying an ax, a hoe, sometimes an auger and a saw, and the older daughters leading or carrying the smaller children. Without a dollar in his pocket when he arrived at the distant frontier, the emigrant at once became a large land-holder." A century later and we find these people crossing the Mississippi in large numbers to occupy and settle the plains and valleys of the west and southwest. "When I came to Texas sixty-four years ago," says W. F. Dougherty,** "there was a steady stream of covered wagons all the way from Indianapolis west. Our family left Trimble County, Kentucky, the fall of 1858, carrying our belongings in a wagon drawn by horses. We went to Indianapolis and there took the National road to St .Louis. All the way the road was crowded with wagons of emigrants for the west. Some of the emigrants left the road before reaching St. Louis, intending to settle in northern Illinois and Iowa. At St. Louis they scattered in many directions, some going to Kansas and Nebraska and some coming to Texas, but in whatever direction they went they found a road which had been beaten or blazed by the stream of emigrants who preceded them."

Judge E. C. Heath, who was born near Rockwall, 1850, and being well qualified to speak of the early days in this part of the state, tells of his father's first trip to Texas. "My father, J. O. Heath, came to Texas from Kentucky in 1846," said Judge Heath. "His first stop in the state was for a short time with relatives at Bonham. In search of a location, he journeyed south from Bonham on horseback. He told me that he did not see a single house between Bonham and the Trinity River, and the only human being that animated that vast expanse of country was a young bachelor who kept the ferry at Barnes' Bridge over East Fork. The ferry was on the trail established by the Republic of Texas from a point on the Red River ten miles north of Bonham to the Mexican border...." Judge Heath further states: "My father followed the National Road from Bonham to Dallas. On the way he looked over a location on East Fork near Barnes' Bridge that pleased him. He came to Dallas where he said the land was so sandy and sorry that he did not think he could make a living on it. Deciding in favor of the blackland on East Fork he at once set out for Kentucky to bring his family out. He told me that he was satisfied that he was the first white

*Ramsey, James G. M., "Annuals of Tennessee to End of Eighteenth Century." Charleston, Russell, 1853.

**"When the Railroad Killed the Stage Lines," by W. S. Adair, Sunday Dallas News, 1923.

man to enter the thicket which he cleared for the site of his cabin, which was the first built in that part of the country. During the next year, however, several families settled around him, among the heads of which were Cary Cobb, Isham Chisum, James Keyser, S. R. Barnes, and somewhat later Ephriham Goss and J. L. M. Baker." Numerous incidents of this nature might be related, but these few snapshots are sufficient to indicate the character of the people and the nature of their quest. No less than a brave, self-reliant, energetic, and resourceful people could have met and conquered the hazards and hardships which confronted them on the frontier.

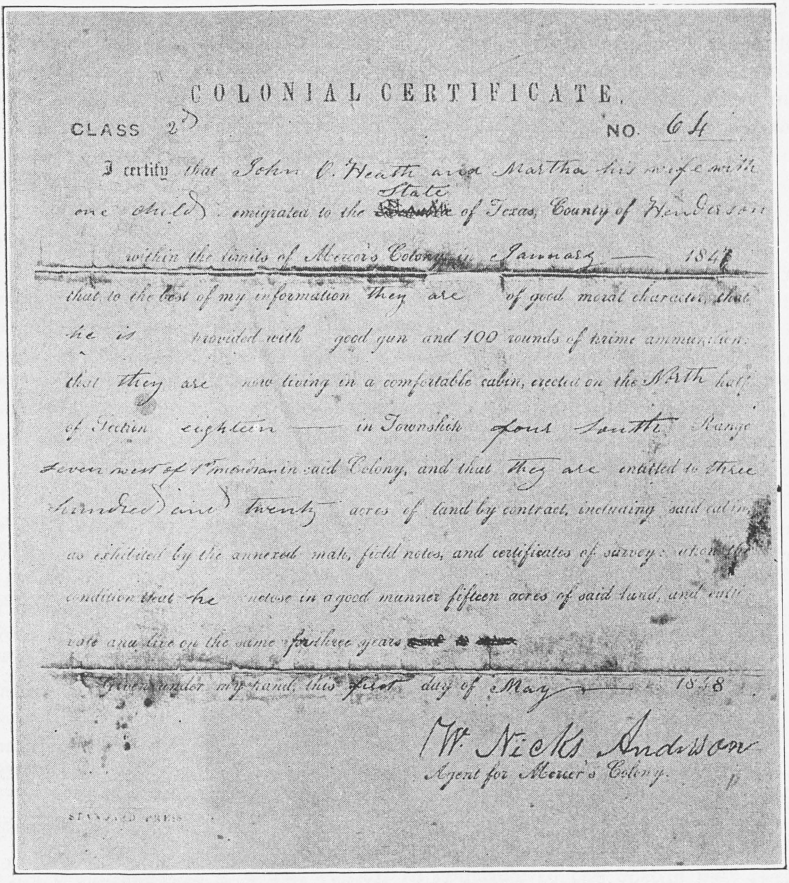
Land Grants and Early Systems of Settlement

This brief account of the early settlers would be incomplete without mention of how they came to possess and get a "stake" in the land. Here again no attempt will be made to go into detail, giving the many acts and grants dealing with the land problem in Texas. Headright, bounty, donation, pre-emption, and special grants played a considerable role in the early disposition of vacant lands, but the more important system of settlement was that of colonization by contract.

The policy of colonization by contract had been inaugurated under Spanish and Mexican rule, and had given satisfactory results in the development and settlement of vacant lands. Upon separation from the Mexican confederacy, the Republic of Texas naturally turned to and adopted, in principle, the same system of land settlement. The Republic and later the State, in the pursuit of this policy, had certain ends in view. It was based on the idea that the State was rich in land and lacking in population; that her vast vacant tracts of land were a menace since they were roamed by hostile Indians, and hence needed to be settled by an agricultural population, a population made up principally of fighting men, a population that could protect itself against the Indians and be ready in case of war with Mexico. Furthermore, these settlements should be made in such a way that value would be added to the lands which remained vacant.

In harmony with this policy the 5th Congress* of the Republic passed an act January 24, 1841, authorizing the President to enter into contract with W. S. Peters, David S. Carroll, and eighteen other associates for the purpose of introducing emigrants into Texas on vacant public lands. On January 29, 1844, President Houston made a colonial contract with Charles Fenton Mercer for the introduction of one hundred families each year for five years, the boundaries of the colony including about 6,000 square miles of land. This colony included what is now Rockwall County as a part of its territory. Under it, grants of land were made to settlers; to a man with a family, 640 acres; to a single man seventeen years old and above, 320 acres. These grants demanded that the emigrant meet certain requirements. These were set forth in a certificate issued by the colony. The accompanying cut is an exact reproduction of one of these certificates. The land

*"A Comprehensive History of Texas," by Wooten, Vol. 1, p. 824.



COLONIAL CERTIFICATE.

CLASS 2d NO. 64

I certify that John C. Heath and Martha his wife with one child emigrated to the State of Texas, County of Henderson within the limits of Mercer's Colony in January 1846 that to the best of my information they are of good moral character, that he is provided with good gun and 100 rounds of prime ammunition that they are now living in a comfortable cabin, erected on the North half of Section eighteen in Township four South Range seven west of the Meridian in said Colony, and that they are entitled to three hundred and twenty acres of land by contract, including said cabin as exhibited by the annexed map, field notes, and certificates of survey: upon the condition that he enclose in a good manner fifteen acres of said land, and cultivate and live on the same three years

Given under my hand, this first day of May 1848

W. Nicks Anderson
Agent for Mercer's Colony.

Figure 17. A photographic copy of a colonial certificate. (Original furnished by E. C. Heath, Rockwall, Texas.

covered by the above certificate was surveyed in 1846, but the title was not made to it till about 1860 and then directly by the State.

It appears that Mercer* failed to comply with the requirements of his contract and on September 25, 1848, the district court of Navarro County declared this contract null and void. This, however, did not set aside the grants which had been made previously by this colony. Under an act of February 2, 1850, entitled, "For the Relief of the Citizens of Mercer's Colony," the just claims of these colonists were validated.

Utilization and Settlement of the Land

Previous to, and at the coming of the white settlers, this region was

*Walsh vs. Preston, 109 United States, 297-329.

roamed and held chiefly as a hunting ground by several tribes of Indians belonging to a group known as the Caddos. They were pushed farther west as the white emigrants increased. Evidently there was some trading and hunting by white men at first, but such interests soon gave way to a permanent settlement of the land for agricultural purposes.

Almost without exception the timbered land along the streams was the first to be settled. In Rockwall County the first settlements were made on East Fork and the smaller streams tributary to it.

There is no way of knowing all of the considerations influencing the settlers to make this choice. But from personal visits with a number of older settlers one is made to feel that the presence of wood and water was the chief determining factor. Upon reflection this appeals as reasonable. The wooded lands furnished logs with which to build the settlers simple cabins. It furnished rails for enclosing small fields where could be grown crops for food. Furthermore, it furnished wood for fuel, and in most cases water was found nearby in abundance. These immediate necessities were principally lacking on the adjoining prairies.

In addition, it may be correctly observed that the majority of the early emigrants came from wooded regions and were not fitted by past experience to the task of bringing under cultivation a heavy prairie land; nor was the simple equipment which they possessed adequate to the task. It may be that to them the presence of trees and running water was an indication of fertility and productiveness of the soil; at least there seems to have existed a common belief among them that the prairie was suited only for grazing purposes. This distinction was made in the early rulings of the Republic in dealing with its vacant lands. It roughly classified lands as (a) irrigable, (b) arable lands not irrigable, and (c) grazing lands. Prices to colonists were based upon this classification, and charges of $3.50, $2.50, and $1.50 respectively fixed for each labor of land.

The much debated question as to whether or not the best lands are occupied by the first settlers might be raised in this connection.* As is very well known, the prairie lands, which at first were rejected and thought of as fit only for grazing, now form the choicest, high-priced agricultural lands. But this fact does not answer the question; it merely raises it. In seeking an explanation of economic behavior it is necessary to become acquainted with those acting and the conditions under which they act. This would lead us to a study of the people and the conditions under which they lived. The pioneer of necessity must provide first of all the prime necessities of life,—food, clothing, and shelter. The pioneer of this region needed a cabin. The material for this he found in the woods, likewise material for enclosing his small fields. Here, too, he found wood for fuel and water to drink. These were lacking on the prairie. In deciding in favor of the wooded and often broken hilly lands he evidently chose what to him was, at that time, the best land available.

*B. H. Hibbard, "History of Agriculture in Dane County, Wisconsin," Bulletin of the University of Wisconsin, No. 101, Chapter IV, page 105.

The Free Range of the Prairies: While the wooded lands along the streams were being settled, cabins built, fields fenced and cleared, and crops, principally of corn and wheat, grown, the prairies were of necessity left open. Early settlers still living remember the time when it was commonly believed that there would always be an abundance of free range. It was not long, however, till advantage was taken of this free grass and for a short period a considerable industry in cattle developed. As a rule the ranchman did not own very much land, at most a few hundred acres, which was used as headquarters. There was no need of purchasing land since plenty of good grass could be had for nothing.

Ranching in this region never took on a very permanent aspect; at least, nothing like we find today in some of the typical ranching areas of the State. The amount of fencing was very small and limited principally to enclosing a few hundred acres, which was owned and served as headquarters. I was informed that the largest ranching area fenced in Rockwall County at any one time was about 7,000 acres. It was a matter of only a few years, however, till such tracts were subdivided and sold as farms. Some of the ranchmen became farmers, others moved farther west onto cheaper lands and continued ranching, while others went into a different business or retired.

Early Attempts at Farming: As has already been suggested, the early attempts at farming were confined to the small fields along and near the water courses and limited to the cultivation of such crops as were necessary for home consumption, principally corn, wheat, fruits, and vegetables. Cotton was grown only in small patches, the lint separated from the seed by hand and spun into thread for household use.

This was characteristically a period of self-sustaining agriculture, forced upon the settlers by the remoteness and inaccessibility of the markets. The nearest water communications were Shreveport and Houston, a distance of more than 250 miles.

Early in the agricultural development of the State North Texas came to be recognized as a wheat region in contrast to the cotton belt farther south in the river bottoms and along the coast. Wheat was introduced by the early settlers and grown by them on the prairies of Red River County as early as 1833*. In 1850 the census showed that all Texas produced only 41,729 bushels of wheat, but by 1858, North Texas alone composed principally of Dallas, Collin, Grayson, Fannin, Tarrant, Parker, Ellis, Navarro, Lamar, Kaufman, and Red River Counties grew 2,000,000 bushels. It was estimated that 500,000 to 600,000 bushels of this would be used for bread and seed, leaving a surplus of about 1,500,000 bushels. The disposition of such a surplus was quite a problem. It has just been stated that water communications were at a distance of about 250 miles. There were no railroads, the roads were few and poor. The only means of transportation was ox-wagons at an average cost of $1.00 per hundred pounds for each hundred miles. It is readily apparent that wheat which was selling locally for $1.00

*"The Wheat Region and Wheat Culture in Texas," by J. W. Latimer, Texas Almanac for 1859, p. 64.

to $1.50 per bushel would not bear transportation to points as distant as Shreveport, Galveston, or Houston, and there compete with northern grain. This meant that an outlet for surplus wheat must be sought locally. The possibilities of such a market were limited to the counties to the south which could be reached for a distance of 100 to 150 miles, to the new settlers, and to the governmental posts on the northern frontier. This demand was soon met and it was seen that this crop could not be grown profitably in large quantities until railroad connections could be had with the gulf ports. Such facilities were optimistically expected in the very near future, but the Civil War intervened and it was not until 1872 and 1873 that the Houston and Texas Central and the Texas and Pacific Railroads respectively reached Dallas. By that time cotton was rapidly replacing wheat as a money crop.

Prior to the Civil War the production of cotton in Rockwall County was restricted to small patches and this was consumed very largely in meeting local domestic needs. As early as 1866 or 1867 there is record of cotton having been cultivated in the county to the extent of a few acres. The growth of cotton as a money crop evidently was stimulated by the high prices paid for it following the Civil War coupled with the fact that it was much less perishable than wheat. Its transportation was not much cheaper but much safer. With the coming of the railroads cotton culture spread rapidly. This not only furnished an outlet to the market for cotton, but it made it possible to introduce better machinery for cultivating, ginning, and baling. Also it made barbed wire plentiful, so much needed in fencing the black prairie land, making it available for cultivation. Also marketing conditions and methods of handling the crop have improved greatly.

I have not been able to secure data previous to 1880 on the production of the chief crops in this county but the following table will show the relative increase or decrease in acreage since that date.

TABLE 7

Acreage for Cotton, Corn, Wheat, and Oats in Rockwall County for the years 1880-1920, inclusive*

Crops	Date				
	1880	1890	1900	1910	1920
	Acres	Acres	Acres	Acres	Acres
Cotton	5,786	18,826	32,816	41,950	42,084
Corn	6,715	11,286	17,416	15,015	11,226
Wheat	2,515	851	2,516	142	3,995
Oats	961	1,705	5,893	2,456	6,638

*U. S. Census Report.

From this table it is readily observed that cotton became one of the leading crops early in the agriculture of the county. Its importance has

continued to increase both relatively and absolutely. At first, or for the period from 1880 to 1900, there was a very marked increase in the cotton acreage. This corresponds rather closely to the period when the black prairie lands were being fenced and put under cultivation. Other main crops, corn, oats, and wheat show a relative decline and with a few exceptions an absolute decline in acreage. This means that the agriculture of the county and the area of which it is typical, has become more and more that of a single crop system, that of cotton.

CHAPTER IV

FARM LANDS

DEFINITION

In this study we are not concerned with the general concept **land**, but with a particular type of land which may be broken up into rather definite classes and grades. Refinements and controversial points are adequately treated elsewhere and for the benefit of those who might be further interested a few important references are given below*. **Land** will be treated in this study as a definite part of the capital investment. It is that part of fixed capital designated as **land** in distinction to permanent improvements and movable capital. It is a requisite of production, a durable productive good from the use of which is expected a series of economic goods and services rendered over an indefinite period of time. It has value and is bought and sold because the products and services which it helps to produce are desired.

No attempt will be made to differentiate between what is nature and what is capital. Under our competitive system of doing business it will be assumed that these natural elements along with the artificial find expression in the purchase price paid for land, and for all practical purposes may be considered as a part of the capital investment. **Land** then will be treated as a definite part of the capital investment in the farm as a business unit, as a "going concern." The farm business as such is thought of as a composite of capital, fixed and movable, of labor, and of managerial ability. From the operation of these elements, variously applied, an income is expected. The nature and distribution of this income is to occupy an important place in this inquiry, and particularly in future studies.

CLASSIFICATION

Land Types

A complete analysis of the utilization of land cannot be made without first having a clear concept of land types, classes, and grades. Various divisions and subdivisions may be made of land, depending upon the characteristics which one wishes to emphasize. For example, land may be humid, semi-arid, or arid, depending upon the amount and distribution of its rainfall. It may be agricultural, forest, or mining land, depending upon the use made of it. It may be private or public land, depending upon the nature of its ownership and control. Again, it may be marginal, sub-marginal, or supermarginal land, depending upon its relative economic advantages or disadvantages. Other groupings might easily be made, but for the

*Richard T. Ely and Edward W. Morehouse, "Elements of Land Economics," The McMillan Company, New York, 1924.
Alfred Marshall, "Principles of Economics," McMillan Company, London, 1916, p. 138.
Christopher G. Tiedeman, "Real Property," 3rd Edition, St. Louis, Mo., 1906.
B. Youngblood and A. B. Cox, "An Economic Study of a Typical Ranching Area on the Edwards Plateau of Texas," Bulletin No. 297, Chap. V, Texas Agricultural Experiment Station, College Station, Texas.

purposes of this study they are unnecessary. We are here concerned with a particular type of land, that devoted to farming, and wish to briefly classify it into its several groups on a utilization basis.

Land Classes

The principal classes, with their subclasses, to be considered are: improved land, woodland, all other unimproved land, and waste land.

In the classification of land the farm is taken as the unit of operation and the acre is employed as the unit of measure. Land classification may be roughly defined as a process of grouping in a quantitative way the lands of a farm or of any definite area, according to their utilization. This grouping is not an attempt to grade land although it does indicate in a general way the relative importance of one class as compared with another. The term **grade** is reserved for a more specific application within the class.

Land Grades

Grading of land is an attempt to differentiate within a class or subclass on a quality basis. It is a method of grouping land according to its relative desirability for a specific use. Land is by no means all of the same grade, any more than it is all equal in locality, fertility, climatic, and topographical features. The concrete thing **land**, of whatever type or class, is a composite of such attributes as location, fertility, climate, and topography. These limit and determine its inherent productive capacity. They are present in varying degrees of sufficiency and for this reason give rise to grades in land. The grade is fixed for any given time by that attribute which is most lacking or deficient. A piece of land may be ideal as to fertility, climate, and topography, but inaccessible and remote in location, so

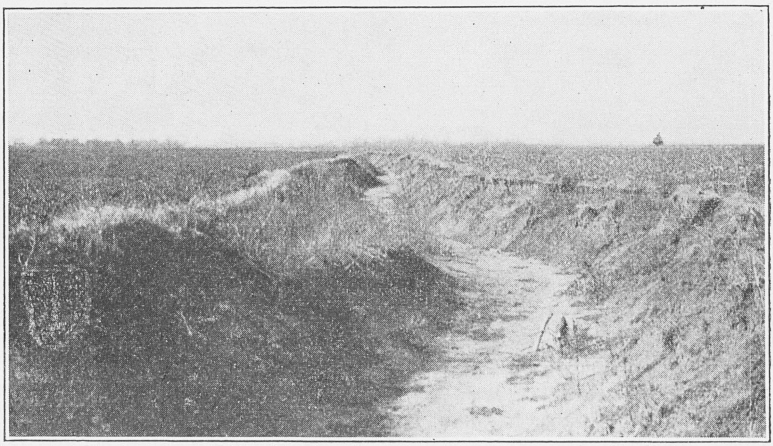


Figure 18. The Houston black clay erodes badly if not protected. Terracing, running the rows with the contour of the land, and leaving the stalks on the land to be turned under help to prevent such erosion.

much so that it falls into a very low grade for a specific use, or may be forced into a class of lower rank and use. On the other hand, improved transportation facilities may so remedy this deficiency that this land may change to a much higher grade or even go over into a class of higher rank.

The possibility of changing land by improvement from a lower to a higher grade depends very much upon the number and nature of the limiting factors. The topography of the land may be such that terracing is necessary; else the land will fall into a lower grade or even into a lower use. In the first place, the terrace is necessary if the present grade is to be maintained, and in the second place, it is an absolute condition to a higher grade. An improvement of this nature, it will readily be seen, is closely related to possible soil improvements. An adequate system of terracing coupled with the growth of some legume to be turned under as a green manure crop may mutually aid in raising the grade of land. It is well to bear in mind that the deficient factors not only fix and limit the grade of land, but materially affect the efficiency of the labor, movable capital, and managerial ability associated with them. Whether an improvement should be made or not depends upon the necessary costs and the advantages to be derived from it. In some cases it would undoubtedly be better to let land fall into a lower use, or entirely out of use, rather than undergo the expense of raising its grade.

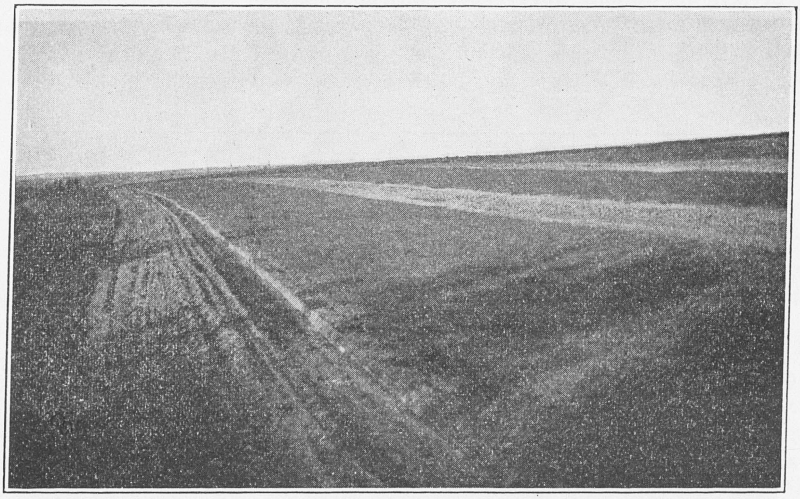


Figure 19. Terracing to prevent soil washing. J. H. Jameson, County Agricultural Agent for Rockwall County, has rendered a great service to his farmers in this connection. By March 18, 1924, he had personally run out terraces on 111 farms. At that time eleven levels were in use and 47 graders and ditchers had been bought by farmers for doing this work.

CLASSIFICATION OF LAND IN THE AREA STUDIED

The area studied includes 500 farm units out of 1,075 in Rockwall County as given by the 1920 census report. The census reports exaggerate the number of actual farm units, especially in the groups of "under three acres," and "three to nine acres." It includes as tenants those "croppers" commonly considered laborers, who receive as part pay for their services a share of the crop from a few acres of cotton. No equipment is turned over to them and only rarely is the part of the crop from which they share distinguished from the main crop. The 500 farms here considered include such arrangements as a part of the main unit and not as a separate farm. No effort was made to select farms. They were visited in regular order, one

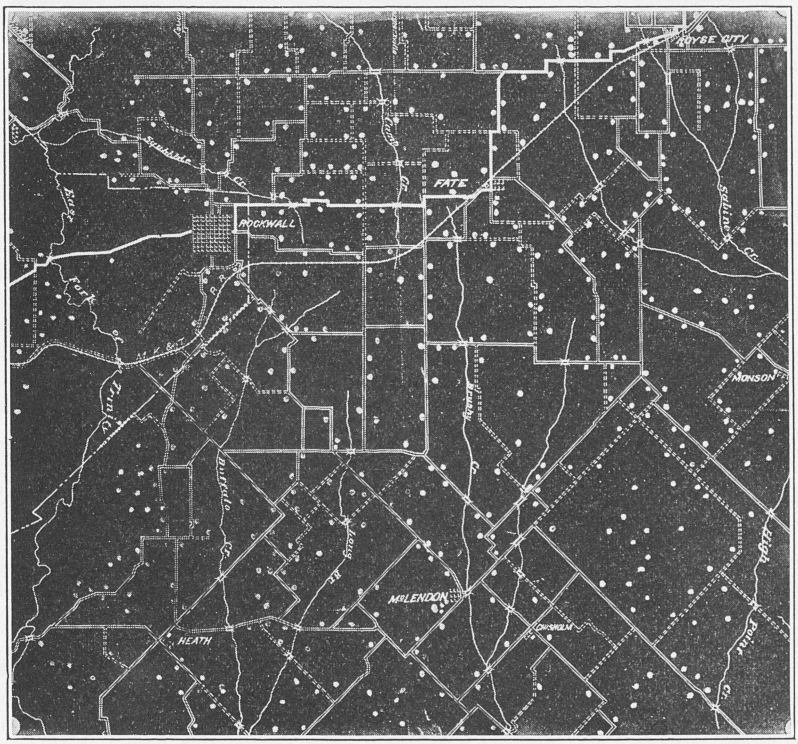


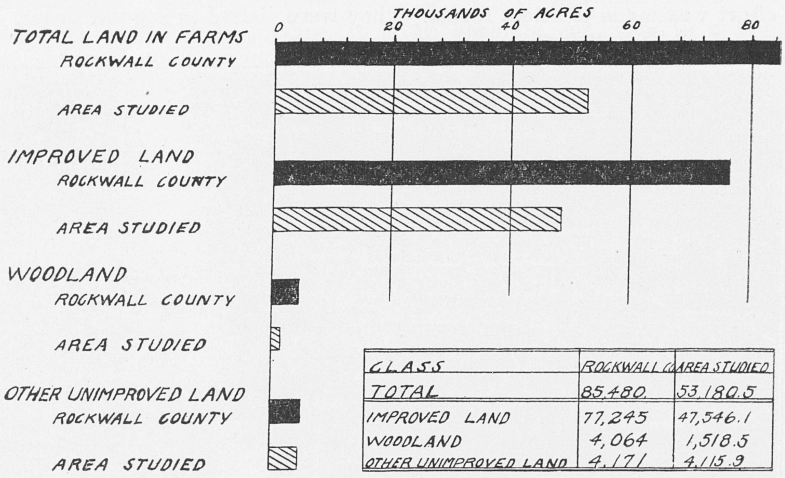
Figure 20. Geographic distribution of the 500 farms surveyed. Each dot represents one farm.

after the other. Their geographic distribution throughout the county is shown by the accompanying map. Every effort was made to secure a representative sample, adequate in size, uniformly distributed over the area so as to take care of any differences which might arise on account of soil or other variation. Figure 21, in which the classification of farm land in the

entire county is compared with a classification of the farm lands studied, indicates very clearly that the area studied is a representative sample, at least in so far as a classification of the area may be taken as a true indication.

FIGURE 21

CLASSIFICATION OF FARM LANDS ROCKWALL COUNTY AND AREA STUDIED COMPARED



CLASS	ROCKWALL CO.	AREA STUDIED
TOTAL	85,480.	53,180.5
IMPROVED LAND	77,245	47,546.1
WOODLAND	4,064	1,518.5
OTHER UNIMPROVED LAND	4,171	4,115.9

The total land area of Rockwall County is 95,360 acres. Of this, 85,480 acres are in farm land, and 9,880 acres not in farms. The total area included in the 500 farms studied amounts to 53,180 acres. A classification of this land into improved land, woodland, other unimproved land, and waste land shows that a high per cent, 89.4, of the total farm land is improved. The possibility of further expansion of agriculture in this region through increased acreage is very much limited. This would suggest that development and improvement in farming must come almost entirely through a better utilization of the area already improved. Much may be done to this end through soil conservation, improvement of crop varieties and livestock breeds, especially in the standardization and breeding of cotton. Likewise a better cropping system in which feed crops would receive more attention, and more emphasis on marketing might well be made a part of this program. These and other factors will be discussed more fully in a later chapter.

The grades of these classes of land will vary quite widely in their productivity and desirability for farming purposes. Compared with other sections of the state, however, this area as well as the entire blackland belt is rather uniform in grade. The best grade is that of the deep, black waxy, prairie soils. The reclaimed bottom lands are probably more productive but

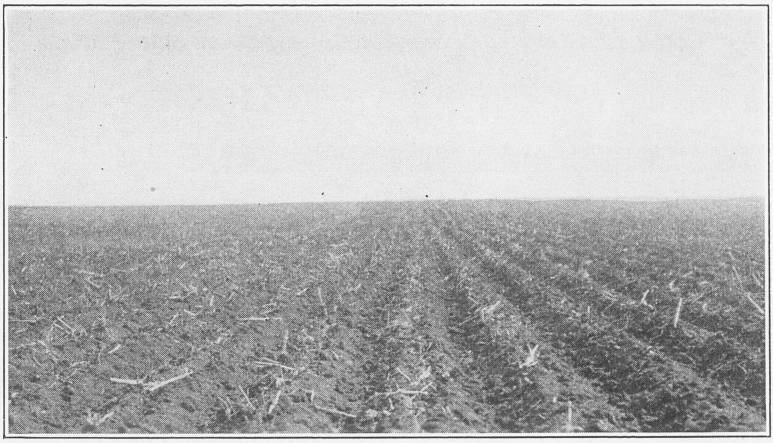


Figure 22. This shows a deep black waxy soil, which under favorable conditions is one of the most productive soils of the county.

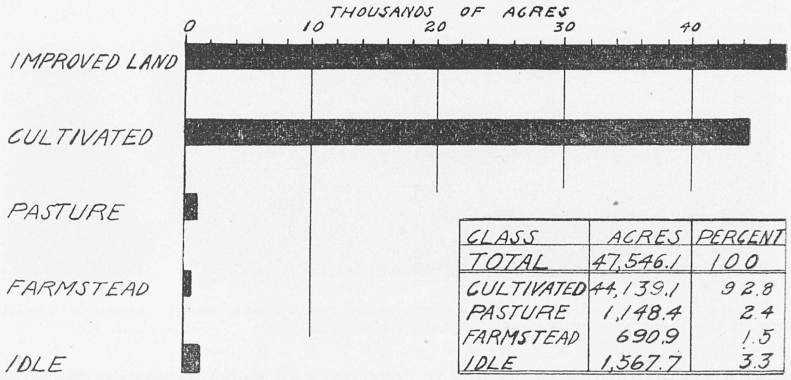
are at a disadvantage in regard to location and flood hazards. The lighter soils in the eastern and southeastern part of the county probably rank next. These soils are known locally as "rawhide" lands. The surface is smooth and more easily cultivated than the heavier soil types, and with favorable seasons the crops on these lands may be almost as good as those of the better lands. The hilly broken lands skirting East Fork valley and some of the streams tributary to the East Fork River probably constitute the least desirable lands in the area studied. But these lands when terraced and protected against excessive erosion are productive and respond readily to treatment. Land of this nature could undoubtedly be more profitably utilized if devoted to a type of farming like dairying, where more grazing and less cultivation would be practiced. The development of good roads, together with a rapidly increasing population in cities like Dallas, should create an increased demand for dairy products and make a limited amount of dairying more profitable and attractive, especially for those lands less suited to the growing of cotton.

UTILIZATION OF IMPROVED LAND

This is characteristically a crop farming region. Of the total improved land of 47,546 acres, 44,139 acres, or 93 per cent, is devoted to cultivated crops. Pasture, farmstead, and idle land occupy a very small part of the total involved area. Of the 500 farms studied, only 110 had any pasture at all, and most of these pastures were small and received but little attention. Idle land is made up almost entirely of land which was flooded and could not be planted or land which was badly infested with Johnson or Bermuda grass. No land was found idle because labor or capital was lacking to bring it under cultivation.

FIGURE 23

UTILIZATION OF IMPROVED LAND IN 500 FARMS IN ROCKWALL COUNTY, 1922



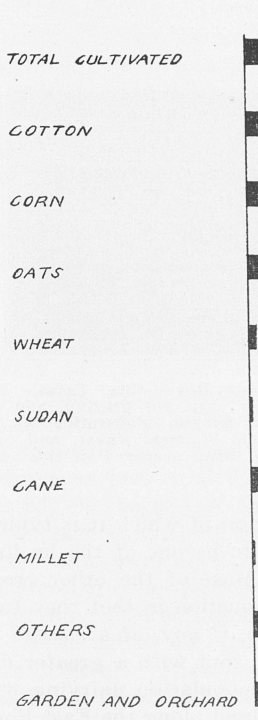
CLASS	ACRES	PERCENT
TOTAL	47,546.1	100
CULTIVATED	44,139.1	92.8
PASTURE	1,148.4	2.4
FARMSTEAD	690.9	1.5
IDLE	1,567.7	3.3

Since cultivated land occupies the greater part of the improved land it is of interest to make a more detailed analysis of this area in order to ascertain what crops are grown and to what extent. The diagram here given shows that a little over 67 per cent of the cultivated land is devoted to cotton. This figure varies considerably for the 500 farms visited. On some farms cotton constitutes over 90 per cent of all crops while on others it falls below 50 per cent. Two important reasons for this variation are soil differences and the different systems of tenure under which the farms are operated. The black waxy prairie soils are best suited to cotton culture and would undoubtedly show a relatively high cotton acreage. It will be pointed out in another connection that tenure affects very materially the number of acres planted to cotton. There is a noticeable increase from owners to part owners, third-and-fourth, and to half-and-half tenants. Next in rank and importance are corn and oats. They occupy 17.9 and 9.9 per cent respectively. Such crops as wheat, sudan, millet, and garden and orchard receive very little attention. It was not unusual to find a farm without an orchard of any kind. To be exact, only 118 out of 500 farms attempted to have an orchard. Quite frequently the garden was nothing more than a few rows of early vegetables, and a late summer and fall weed patch. Legumes were almost entirely ignored in the cropping system. Alfalfa was about the only legume grown and that to a very small extent. Out of 500 farms, only five, totaling 22 acres, grew this crop. Sweet clover seems to do well when given a chance. The cut here shown tells its own story. This is a very successful and satisfactory attempt to grow sweet clover on the black waxy soil. The crop is used both for grazing and hay.

This survey of the land situation reveals the fact that there is a very

FIGURE 24

UTILIZATION OF CULTIVATED LAND ON 500 FARMS STUDIED



CLASS	ACRES	PERCENT
TOTAL	44,139.0	100.
COTTON	29,665.	67.2
CORN	7,917	17.9
OATS	4,390.	9.9
WHEAT	540.	1.3
SUDAN	175.	.4
CANE	563.	1.3
MILLET	119.	.3
OTHERS	471.	1.0
GARDEN AND ORCHARD	305.	.7

small amount of unimproved and waste land in this area. In other words, almost all of the land suitable for agricultural purposes is being cultivated. A limited amount may be added by leveeing, but this will have to be done at a rather high cost. The land problem for this region, therefore, is pretty largely one of conserving, building, and utilizing the area already under cultivation.

Soil building and soil conservation is a part of the problem of improving the grade of the land. The grade of land in this region may be improved by an adequate system of terracing to prevent excessive washing and erosion, by the growth of legumes to be used as hay, grazing and green manure crop, and by the exercise of greater care in combating Johnson and Bermuda grasses where they are likely to become pests in cultivated fields. The location of the farm relative to good roads and market facilities materially affects the grade of land, and while the farm cannot be moved and placed on a good highway, a good highway may be built to accommodate farming areas and thus increase the desirability of such lands.

Figure 25. Sweet Clover on the farm of L. E. Edwards, Royse City, Texas. Mr. Edwards has found Sweet Clover very satisfactory as a hay crop, for grazing, and for soil building. The Texas Agricultural Experiment Station System, Substation No. 6, Denton, Texas, has been able to practically double the yield of corn, wheat, and oats grown in a rotation with Sweet Clover. A bulletin is now being prepared in this connection.

It is very evident that this county and the region of which it is typical is well suited both in soil and climate to continue to be one of the leading and most dependable cotton areas of the State. Most of the other crops which are grown contribute indirectly to cotton production in that they furnish feed for work stock. There is little indication, if any, of a change in the type of agriculture. It is very likely, however, that with a greater development of industry and with a growth of city population dairying will receive more and more attention. The hilly broken land along the East Fork valley is well suited to such an enterprise. Before recommending specific changes in the organization of farm operations one would need to have available detailed information secured from a representative number of farms on which accurate records and accounts had been kept. Where possible, it is hoped to follow general surveys of this character with such studies.

CHAPTER V

SIZE OF FARMS

THE TERM DEFINED

The meaning of the term size as related to farms is by no means standardized. To one person size means area, to another the total capital invested, and to others it may mean the amount of labor required or the total net income realized from the farm as a business unit. For this reason, any discussion on size must of necessity qualify its statements and define the viewpoint taken. It is at once apparent that before any reliable comparisons can be made a common agreement must be reached as to a definition of the farm unit, the unit of measurement applied, and the type of farms to be considered. For example, the mixing of widely different types is confusing and misleading. A good illustration of this may be taken from the U. S. Census Report for 1920. It gives the average size of farms for Texas as 261.5 acres. Such a figure, and like calculations, can have little if any useful application since such diverse conditions and widely different types have been included. Truck farms, fruit farms, cotton farms, grain farms, livestock farms, ranches, etc., have gone to make up the total from which this and similar averages are derived. In area these farms would vary from a few acres to several hundred sections. Likewise, differences just as striking would be revealed in the amount of capital invested, the nature of the capital invested, the amount and kind of both labor and equipment required. Consequently, such averages cannot be taken as typical of all farms, nor of any particular group included. This illustration is not offered by way of criticism, but it should suggest the need of greater differentiation in dealing with the size aspect of farms.

It is not at all strange that such wide variations are exhibited in the size of farms. There are good reasons for such variations: there is the diversity of social and economic conditions under which land is held; the wide variations in soil fertility, climatic conditions, transportation and marketing methods, variations in the efficency of the factors of production themselves, and the personal element account very largely for such differences. The multiplicity and complexity of these forces influencing size in general, render it practically impossible to make broad recommendations in regard to it. It is believed, however, that much helpful information may be collected and analyzed relative to the influence of size for restricted areas of uniform type and similar economic, soil, and climatic conditions.

SOME FACTORS INFLUENCING THE SIZE OF FARMS

At this point a brief discussion will be devoted to some of the factors which influence the size of farms in general. Following this, attention will be focussed on the influence of size as exhibited by the 500 cotton farms in the Blackland belt of Texas.

The factors affecting the size of farms may roughly be grouped as physical, economic, political, and personal. These may find expression in a great many connections. Moreover, their behavior is seldom identical, for

the simple reason that the conditions under which they function are ever changing. In a study of size in a given type it may be found that certain factors are acting to decrease the area operated while over against these may be another set of factors tending to increase the number of acres as well as the total investment. The problem then becomes one of attempting to measure the relative importance of the factors present, looking forward to the best possible control and direction of such forces.

Physical Factors

Under physical factors may be included climate, topography, soil, location, and area or geographic space. These affect both the extensive and intensive margins of land utilization. They fix as it were the lower and upper limits between which the economic, political, and personal forces may operate. Climate, through the influence of rainfall, evaporation, and temperature upon the productivity of the soil determines to a certain extent the different classes and grades of land and hence the uses to which such lands may be put. The character of the soil, its structure, its chemical contents, and its surface features have a direct bearing on size. Along with these physical factors location must be considered. Land may be ideal in every other respect but if it is distant from the market it will necessarily, for the time being, have to be devoted to an extensive type of farming characterized by large acreages.

This brief discussion cannot be passed over without making some mention of the nature and influence of geographic area or space in relation to agriculture. Here as in no other industry space is important and significant. It is limited and cannot be extended very easily. In agriculture room is necessary to operate on one dimension. It is true, however, that a certain amount of intensification may be practiced but such attempts soon find a limit in the law of diminishing returns.

Economic Factors

The most apparent economic forces in relation to the size of farms are such factors as type of farming, labor requirements, availability and adaptability of improved machinery, transportation costs, and the price of land. Credit facilities and interest rates affect land prices and in this way indirectly influence the size of farms.

The relation of type of farming to size is at once evident. A few illustrations should make this clear. In ranching there is a very extensive use of land; consequently the unit of area operated is comparatively large. In cultivated crops the area as well as the total investment may vary greatly depending upon the nature of the major crop grown. In a wheat region where improved machinery has been substituted very largely for hand labor, large-scale organization is encouraged, while in cotton, tobacco, small-fruit, and truck regions where much hand labor is required, quite often of a seasonal nature, the unit of operation must of necessity be smaller. In types of farming like dairying where labor is rather evenly

distributed or in small grain regions where machinery can be employed on a large scale, the size of the farm should show a noticeable increase.

Transporation costs are not without their influence. A change in freight rates affects in a very decided manner the distance of the product from the market. An increase in transportation charges, while the price remains the same or relatively low, acts to place the product more distant from the market. The movement of certain bulky crops like hay may be rendered impossible. At the present time transitions are taking place in both the wheat and hay regions to dairy farming. This is an attempt to reduce bulk and increase the value per unit of weight. This is forcing a more intensive use of the land and will tend to decrease the size of farms. The price of land has its effect on size. With an increase in price a more intensive use must be made of it and for this reason the size tends to decrease or with a decrease in price the reverse is true.

Political Factors

The land policies of both state and national governments have played an important role in shaping the size of farms. In pioneer days large unsettled tracts of land, occupied principally by hostile Indians, were considered not so much as an asset but as a menace. Protection was needed. Settlement of the land would give it. Large grants were made as an inducement to settlers to take the risks and undergo the hazards of the frontier. Following this was the need for increased transportation facilities. Here again extravagant grants seemed to be necessary to induce private concerns to take the risk of a new and undeveloped territory. The more recent grants have been made with greater concern given to the best conservation and utilization of our land resources. At first the grants were large and made no doubt with very little, if any, regard to the proper size of farms. The more recent grants, however, of 80 to 160 acres have been made with some attempt to approximate the family size.

Personal Factors

Too often the influence of the personal or individual factor is neglected in a discussion of the size of farms. True enough, it is a factor which is very difficult to isolate and measure with any very great degree of certainty; yet we know that it is present and active in every farm operation. In a given type of farming the size of individual farms ultimately finds its limitations in the managerial ability of the farm operator. An increase in the ability among farmers should make possible and in time bring about an increase in the size of the farm unit. This increase in ability may not always be associated with an increased acreage. It may find expression in the use of better equipment and in the production of a higher quality product. The adjustment of size to ability may by no means be perfect but in the long run it is claimed that the best man tends to get onto the best land.*

*H. C. Taylor, Agricultural Economics (New York, 1920) Chapt. XVII, pp. 197-198.

SIZE OF FARMS IN ROCKWALL COUNTY

Preliminary to the more specific treatment of size as revealed by the 500 farms surveyed it is thought proper to offer a definition of the farm unit used, and to comment briefly on the unit of measurement employed.

By a **farm** as used in this study is meant sufficient land and equipment for at least a unit of organization and any amount in addition to this minimum requirement so long as it is operated under a single management. A unit of organization is roughly defined as the land and equipment necessary to employ the greater part of the operator's entire time. In the blackland belt a crew of one man and two horses or mules is expected to cultivate 40 to 60 acres. To illustrate—a cropper who cultivates a few acres under the direct supervision of another person and hires out for the greater part of the time would not be considered a farmer, but a laborer. On the other hand, if one has turned over to him or in his possession, land, teams, tools, etc., sufficient to occupy the greater part of his time or in addition the time of his family and any hired labor which he may employ, he would be considered a farmer. A deliberate attempt has been made to avoid including croppers as farmers.

Area has been taken as the basis and the **acre** as the unit for measuring size. It is felt that the region under consideration is sufficiently uniform in its type of agriculture, soil, climate, and economic conditions to justify area as a basis for measuring size. At the same time it is recognized that such a unit may be misleading, and especially when it is employed in a comparison of farms varying widely in type, say, cotton farming with ranching. A farm of 200 acres in the best blackland belt might easily equal in total value several thousand acres of ranch land in some parts of West Texas. On the other hand, it might be the equivalent of only a few acres of choice truck land in the vicinity of a large city like Chicago, or even a much less area if confined to such intensive operations as farming under glass. This weakness is eliminated in its present use since it is being applied to a single type of farming whose conditions are strikingly uniform throughout.

Trend of Size of Farms Since 1880

The trend of size of farms in Rockwall County since 1880 is shown in table 8 both for total number and by class groups. From this tabulation a number of observations may be made. The most apparent fact is that the number of farms more than doubled during the first twenty years from 1880 to 1900, and has remained fairly constant since 1900. The average size has at no time shown any wide fluctuations. The highest average number of acres per farm was 116 for 1880 while the lowest average number of acres was 73.8 for 1900. A slight decline in the total number and a slight increase in average size per farm is shown for 1910. This perhaps finds a partial explanation in the fact that at this time West Texas was undergoing a very rapid development. The census report shows an absolute decline in the population of Rockwall County for this period. This migra-

tion of farmers and farm laborers would undoubtedly encourage more extensive farming and tend to increase the size of farms. For 1920 the total number as well as the average size of farms approximate closely that of 1900. On the whole it may be said that the size of farms for this county has remained fairly constant for the past 40 years, indicating that a rather static condition has been reached.

TABLE 8

Size of farms in Rockwall County classified by area*

Date	1880		1890		1900		1910		1920	
Totals	526		861		1090		922		1075	
Av. Size in Acres	116		89		73.8		91.4		79.5	
Classes	No.	100%	No.	100%	No.	100%	No.	100%	No.	100%
0- 9	4	0.8	7	0.8	26	2.4	13	1.4	30	2.8
10- 19	30	5.7	32	3.7	47	4.3	22	2.4	67	6.2
20- 49	203	38.5	357	41.5	358	32.8	162	17.6	287	26.7
50- 99	132	25.0	264	30.6	411	37.7	391	42.4	367	34.1
100-199	143	27.3	189	21.9	243	22.3	330	35.8	321	29.9
500-999	9	1.7	9	1.0	3	0.3	1	0.1	1	0.1
1000 and Over....	5	1.0	3	0.4	2	0.2	3	0.3	2	0.2

*U. S. Census.

A more significant feature of the size is its distribution from the smallest to the largest. The 500 farms studied in the survey are grouped in Table 9 according to size with class intervals of 50 acres. This shows that 68 per cent of these farms fall between 50 and 150 acres, more than 50 per cent of them contain less than 100 acres while more than 80 per cent of them contain less than 150 acres. It may be said then that this region is practically free from large holdings and is characterized by rather small farms individually operated. The family size of 50 to 150 acres is typical.

It has been observed that these farms fall within certain size groups with the number in each group varying widely. The question naturally arises as to what relation, if any, exists between size, as here expressed in area, and the utilization of the several factors of production in the farm operation.

TABLE 9

Distribution by size of 500 farms in Rockwall County for 1922

Class	Total per Class	Percentage
Total	500	100
0-49	63	12.6
50-99	207	41.4
100-149	134	26.8
150-199	50	10.0
200-249	24	4.8
250 and Over	22	4.4

Relation of Size to Capital Investment

The relation of the size groups to the various types of capital invested is shown in Table 10. This not only gives a comparison of the absolute advantages for the several size groups, but a comparison within the same group of the importance of the different kinds of capital invested. It emphasizes the very high investment in fixed capital, and the comparatively small investment in movable capital. A somewhat different emphasis is made of these data in Table 11, where the capital investment per acre by size groupings is shown. The fact most apparent in this table is the uniform decrease in amounts invested in the various capital items with an increase in size groups. For example, the total average of movable capital invested per acre in the size group from 0-49 is $11.31, while in the group of 250 acres and over, it is $5.98. The fact, however, that the investment per acre in these different kinds of capital decreases as the number of acres increase does not necessarily mean a more efficient use of these factors. It may merely mean that such investments are spread over a

larger number of acres. It does indicate for these farms that a more extensive use is being made of such capital items as well as that of managerial ability.

TABLE 10

Average Amount of Capital Inve ted Per Farm by Size Groupings

Class	Number	Average No. of Acres	Machinery and Equipment	All Livestock	Work Stock	Total Movable Capital*	Permanent Improvements	Land	Total Fixed Capital
	500	106.36	$349.27	$ 545.97	$382.48	$ 895.26	$2,085.40	$12,075.17	$14,160.57
0-49	64	39.19	152.20	290.85	175.84	443.05	1,209.66	5,241.08	6,450.74
50-99	206	71.28	253.40	389.34	260.31	642.74	1,629.74	8,191.39	9,821.13
100-149	134	116.89	382.38	608.44	437.56	990.82	2,116.96	13,654.21	15,771.17
150-199	50	166.09	533.84	875.22	618.36	1,409.06	3,168.23	18,665.60	21,833.83
200-249	24	214.29	658.20	991.97	765.31	1,650.17	4,090.57	22,065.17	26,155.74
250 and Over..	22	312.64	836.31	1,034.64	795.98	1,870.95	4,177.11	32,380.00	36,557.11

*Machinery and Equipment plus Total Livestock.

TABLE 11

Average Amount of Capital Invested per Acre by Size Groupings

Class	Number	Machinery and Equipment	All Livestock	Work Stock	Total* Movable Capital	Permanent Improvements	Land	Total Fixed Capital
	500	$3.28	$5.13	$3.59	$ 8.41	$19.60	$113.53	$133.13
0-49	64	3.88	7.42	4.49	11.30	30.86	133.73	164.59
50-99	206	3.55	5.46	3.65	9.01	22.86	114.91	137.77
100-149	134	3.27	5.20	3.74	8.47	18.11	116.81	134.92
150-199	50	3.21	5.26	3.72	8.47	19.07	112.38	131.45
200-249	24	3.08	4.62	3.57	7.70	19.08	102.96	122.04
250 and Over.	22	2.67	3.31	2.55	5.98	13.36	103.56	116.92

*Machinery and Equipment Plus Total Livestock.

Relation of Size to Physical Production

From a consideration of the relation of size to the utilization of the various kinds of capital per farm and per acre let us next go to a brief consideration of the relation of size to the producing capacity of the farm. There is a popular belief that size naturally influences the yield per acre of crops grown. It is reasoned that more careful and intensive cultivation will be practiced on the small farms resulting in a larger yield per acre. This claim does not seem to hold true in the case of cotton farms. The table given in this connection shows the **crop index*** for each size group. This indicates that the farms ranging from 50 to 150 acres in size are slightly more efficient in the production of mere physical volume than the other groups.

*Index of production as here used is the percentage for each class based on the average for all classes. Thus **index of producation** of cotton for size group 0-49 acres is 102.5, which is to say that cotton production per acre is 2.5 per cent greater in this class than for the average of all classes. From this the crop index is derived by weighting the index of production of each separate crop by the number of acres planted to that crop. To illustrate, the following is the method of calculating the **crop index** for size group 0-49 acres:

Crops grown	Index of production		Acres planted to each crop		
Cotton	102.5	x	1,500.75	=	153,826.88
Corn	99.7	x	473.00	=	47,158.10
Oats	90.8	x	97.00	=	8,807.60
Sudan	51.3	x	11.00	=	564.30
Cane	77.6	x	22.12	=	1,716.51
Millet	78.8	x	2.75	=	216.70
Total			2,106.62		212,290.09

$$\frac{212,290.09}{2,106.62} = 100.77 \text{ Crop Index}$$

TABLE 12

Relation of Size to Productivity

Class	Crop Index
0-49	100.78
50-99	101.47
100-149	101.21
150-199	96.73
200-249	95.58
250 and Over	98.65

TABLE 13

Comparison of Size of Farm With Yield of Lint Cotton per Acre

Size in Acres	Yield of Lint Cotton per Acre in Pounds							Number of Farms
	0 to 49	50 to 99	100 to 149	150 to 199	200 to 249	250 to 299	300 to 349	
0-49	2	6	25	24	5		1	63
50-99	4	24	76	80	20	3		207
100-149	14	39	53	21	7			134
150-199	2	11	19	14	3	1		50
200-249	1	4	11	5	3			24
250-299		3	4	2		1		10
300-349			3	3		1		7
350-399				2				2
400-449			1	1				2
450-499								0
500-549				1				1
	23	87	192	153	38	6	1	500

$r = -.068 \pm .030$

The influence of size on yield is measured and indicated more accurately perhaps in Table 13, where the size of farm is correlated with the yield of lint cotton per acre. Cotton is taken because it is the chief money

crop grown. The correlation as shown by "r" is negative and very insignificant. In other words, it may be said that the yield per acre for the 500 farms studied does not appear to have suffered from the fact that farms were too small or too large.

Relation of Size to Income

Table 14 gives the income per farm, size groupings and the number in each group. From this table it is very evident that the average net income per farm increases with an increase in size groupings. On the other hand in Table 15, where the average net income per acre for the several groups is shown, it is apparent that those groups having the larger acreage invariably show a less net income per acre than the groups having a smaller number of acres. But in no case does an increase in size seem to have taken place to the extent of causing an absolute decrease in a large-size grouping under that of the next smaller group.

It will be observed that tenant farmers in the several size groups almost invariably show a higher net income per acre than the corresponding group for owners. This, no doubt, is accounted for principally from the fact that many of the owners have outstanding mortgages against their land on which they are paying interest. This interest has been deducted as a part of their current expenses. Evidently it is cheaper to rent land than to own it but perhaps not always as satisfactory.

TABLE 14

Income per Farm by Size Groupings

Class	Owner		Third and Fourth		Half and Half	
	Number	Net Income per Farm	Number	Net Income per Farm	Number	Net Income per Farm
Average	165	$ 752.05	262	$ 818.13	73	$ 714.26
0-49	20	233.03	21	411.05	22	397.90
50-99	59	570.89	114	579.98	34	736.90
100-149	23	798.48	82	979.50	9	844.73
150-199	22	932.71	26	893.41	2	1 800.75
200-249	11	1,386.23	9	1,358.41	4	1,208.01
250 and Over.....	10	1,433.81	10	2,375.66	2	1,148.18

TABLE 15

Net Income per Acre for Different Size Groups According to Tenure

Class	Owner-All	Third and Fourth	Half and Half
0-49	$6.53	$9.46	$10.24
50-99	8.23	8.31	9.86
100-149....	6.67	8.48	7.22
150-199....	5.72	5.33	10.29
200-249....	6.54	6.49	5.21
250 and Over	4.68	7.26	4.21

SUMMARY

By way of a brief summary it may well be repeated that specific recommendations relative to the influence of size should be limited to a single type of farming and confined to a definite geographic area wherein the conditions are strikingly uniform throughout.

Size represents a possibility. In large farms the possibility of either gain or loss is great, certainly greater than in smaller farms. The chances for gain, in so far as the facts here considered indicate, outweigh the chances for loss. This will be ephasized more particularly in Chapter IX on Income, where a correlation of size with income shows a positive and significant relation.

Small farms show little if any advantage over large farms in yield per acre, and a decided disadvantage in the production of a net income per farm. The average size for all farms is 106 acres and the typical group is that from 50 to 99 acres. This group among the owners makes the largest income per acre. All size groups above the 50- to 99-acre group show a decided gain in net income per farm. It is true that the income per acre decreases as the number of acres increase, but this decrease in income per acre is more than offset by the increase in acres. This would seem to suggest 50 to 99 acres as the lower limit in size for this area. The group from 0 to 49 acres enjoys no advantage in the yield per acre; if anything it suffers a slight loss. This coupled with the small number of acres in the farm results in a relatively small total income. On the other hand the groups above 50 to 99 acres enjoy a greater income per unit of organization or per farmer. On this basis it should be the policy to discourage operations of less than 50 acres and encourage the handling of as many acres as the ability of the farmer will permit. It is very evident that this region has more to fear from the possibility that farms will become too small than it does from their becoming too large.

CHAPTER VI

FARM LABOR

It is well known that manual labor has always been a very important factor in all types of agricultural production. It is especially important in cotton farming. Cotton culture is characterized by the heavy demand it makes on hand labor. The cotton grower is concerned not so much about how much he can plant and plow as he is about how much he can chop, hoe, and pick, and particularly how much he can secure labor to pick. It is in these operations which require a relatively large amount of hand labor that the size of the crop finds its greatest limitation.

In this survey no attempt was made to determine the total amount of labor used by the 500 farms studied. Family labor and horse labor furnished by the farm are items which are very difficult to determine by the survey method and for this reason it was thought better to leave this information to be developed by a detailed farm-records-and-accounts study which is now being made for this section. To be more specific, there are a number of things about farm labor which one needs to know in order to so organize it as to insure its most effective and efficient use. It is well to know the relative amount of the labor furnished by the farm and that hired, but more especially do we need to know the distribution of labor throughout the year, its distribution to the various crops and different farm enterprises, and finally the amount of both man and horse labor required for the several operations carried on in both crop and livestock enterprises. Not only the amount and distribution of both man and horse labor is necessary but the physical accomplishment of a given amount of labor for each of the several farm operations. This task can best be accomplished by the detailed records-and-accounts method. An attempt was made, however, in the present survey to get at the amount of hired labor employed. This account is taken care of in the farmer's credit arrangements for the year and in the majority of cases he has pretty well in mind the amount of hired labor which he has used during the year.

HIRED LABOR

One would naturally expect hired labor to constitute a significant consideration in the operation of cotton farms, but is surprised perhaps to find it by far the largest single item among those of current expenses. Of the 500 farms, 450 hired labor, either regular or extra, or both. These farms spent an average of $346.38 each. This constitutes 40.5 per cent of the current expenses. The next highest single item is $161.85 for interest on borrowed money, constituting 15 per cent of the current expenses.

Hired labor will be divided into two main classes, regular and extra. By regular labor is meant that farm help in addition to the family which is employed regularly throughout the year or for the greater part of it. Extra labor is that farm help which is employed in addition to both family and regular help to assist with such farm operations as chopping and pick-

ing cotton. The demand for this type of labor is seasonal and generally very keen. Regular labor makes up hardly one-fourth of all hired labor, while extra labor constitutes more than three-fourths of all hired labor. Extra labor is devoted almost entirely to chopping and picking cotton. These are operations which require hand labor and limit very decidedly the size of the crop to be grown. Extra labor is done by unskilled Mexicans and negroes, very largely by negroes. The majority of them no doubt have had previous experience in this kind of work but no special training has been given to better prepare them for the job.

Regular Labor

Table 16 shows the amount and distribution per farm of regular labor hired. From this it is observed that only 154 of the 450 farms hiring labor employed regular help. These employed a total of 269 persons or an average of 1.74 persons per farm. One to two hands as the table indicates was the more usual practice. This would indicate very clearly that the farms in this section offer but a moderate opportunity for steady employment. On the other hand the seasonal demand for labor is very active at certain times of the year, especially during the picking season.

TABLE 16

Amount of Regular Labor Hired

Number of Men per Farm	Number of Farms	Total Number of Men
Total	154	269
1	99	99
2	33	66
3	7	21
4	8	32
5	2	10
6	2	12
7	2	14
15	1	15

Nationality: The nationality of the regular labor is very largely negro. Of the 269 persons regularly employed, 212 were reported as negroes and 57 as whites.

There was a decided preference for married regular help. Such help would undoubtedly be more dependable in that it would be less easy for them to leave the farm. It would be less trouble to house and board them since it would be done in their own family. Another reason for such a preference might be the presence of their family, which would increase the available supply of extra labor.

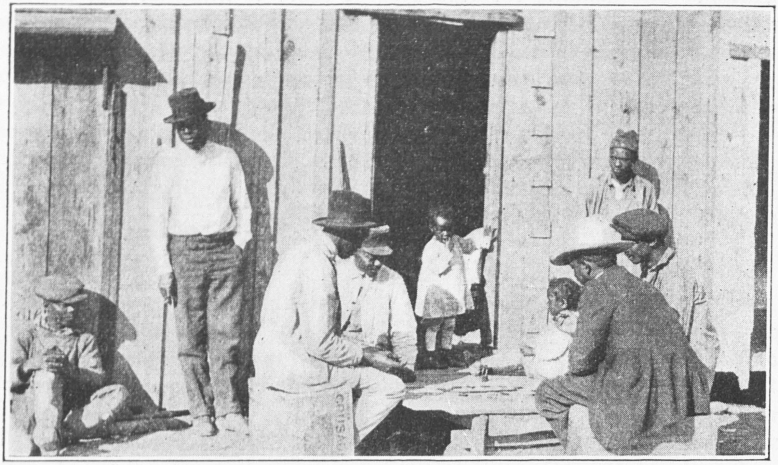


Figure 26. Farm labor, present and potential. This group is enjoying the sunny side of the cabin on a Sunday afternoon.

Nature of Work: The nature of the work done by the regular hand is not so different from that done by the extra help. The work of the regular hand is of course more varied, since it covers a longer period of time, but is often of the same nature as that done by extra labor. It consists mainly of plowing, planting, cultivating, chopping, hoeing, chores and general farm work. During the picking season the regular hand may and often does pick cotton along with the extra help and receives pay on the same basis as they.

TABLE 17

Rate Paid Regular Labor in Rockwall County, 1922

Dollars per Day	Frequency
Total	159
.90	2
1.00	56
1.25	88
1.50	11
1.75	1
2.00	1

Rate of Wages: The rate paid regular labor in Rockwall County for the year 1922 is roughly indicated by Table 17. A number of factors enter to cause the wide variation here shown. The type of laborer would cer-

tainly influence the amount the farmer is willing to pay him. If he is strong, industrious, and experienced he would be much more in demand and more likely to get higher wages than the laborer who was inexperienced and indifferent toward his work. Nearness to cities or industrial plants would very likely influence farm wages to go up. Also the laborer may and often does receive many considerations other than money from the farmer who employs him. In almost every case a house in which to live is furnished; wood and water are furnished in the majority of cases; and in not a few, credit or living expenses. Other items less commonly furnished are board, garden, a small cotton crop, and in rare instances cow feed and pasture are included. Local custom may explain to a slight degree the differences in wages paid. It is felt, however, that for similar considerations the rate paid for regular labor will be found to be remarkably uniform. The most frequent occurring rate was $1.00 to $1.25. Amounts above or below this range were exceptional and not at all common.

Extra Labor

As a rule, the farmer did not remember the number of persons and the time for which employed in accounting for his extra labor. He always knew whether or not he had hired extra labor, for what it had been hired, the total amount and rate paid for it. According to the answers gathered 444 farmers out of 500 employed extra labor.

Source: The principal sources for extra labor were local rural neighborhoods, nearby towns and cities, transient and out-of-state laborers. No very accurate information could be secured as to the relative number which came through these several sources. The farmer always knew that he secured his pickers from whatever source available. It was very seldom that all of them came from one source. At one time some of them were secured from neighboring farms and villages; for others he had made a trip to East Texas or Louisiana, or perhaps to Fort Worth or Dallas. Again much help migrates from other surrounding areas to this blackland belt to pick cotton. There seems to be an attempt on the part of cotton growers to keep as much labor as possible on the farm. The majority of the regular hands are married. It is a common practice for them to work a small crop of a few acres on the half-and-half basis. This helps to hold them so that they and their family will be available for picking cotton and other special work. From the nature of the answers given the greatest number of pickers came from local and nearby sources.

Method of Securing: No special agency is relied upon for securing the farm labor needed. The chief method of securing labor was found to be personal solicitation. Out of 434 answers, 433 gave "personal soliciting" as the method by which extra labor was secured. One farmer claimed to have secured help through advertising. No doubt a considerable number of the laborers applied for work at the farm. No very great difficulty seems to have been encountered in securing help, since only 80 registered any complaint in this regard.

Nationality: The greatest number of the extra laborers were negroes. Of course a certain small percentage were white with a sprinkling of Mexican. I was informed that it was only recently that Mexican loborers had appeared in this part of the State. Farther south and west Mexican labor is much more common. Skill and training is not so essential in cotton picking as those farm operations which are paid for by the day. Cotton is paid for by the amount of seed cotton picked or pulled. It is piece work. If the operator does much, he is paid more. In other words the worker is paid for what he does and not for putting in so much time.

TABLE 18

Rate Paid for Chopping Cotton in Rockwall County, 1922

Dollars per Day	Frequency
Total	341
1.00	14
1.25	156
1.50	121
1.75	20
2.00	30

Rate of Wages: The rate paid for extra labor ranged higher than that for regular labor, and in the case of cotton picking showed a rather wide variation. This higher rate is not due to a difference in skill required. On

Figure 27. A crew chopping cotton on a blackland farm in Rockwall County. This is one of the operations requiring a considerable amount of hand labor. The amount will vary with the nature of the soil and the season.

the whole the regular farm hand must be more skilled and versatile than the extra laborer who chops and picks cotton. The difference evidently is caused by the relatively large amount of extra labor to be done. There is a certain amount of chopping or picking of cotton to be done with a limited time in which to do it and a limited supply of laborers. Table 18 shows the rate paid for chopping cotton in Rockwall County for 1922. The rate, it will be observed, varied from $1.00 to $2.00, but the prevailing or most common rate was $1.25 to $1.50. Of the 341 farmers reporting on this item, 277 of them paid $1.25 to $1.50 per day for chopping. It was not unusual, however, to find a farmer paying $2.00 for chopping. It was noted that quite often in and around towns, even though they were small, the rate was higher. Competition with other demands for labor no doubt

TABLE 19

Rate Paid for Cotton Picking in Rockwall County, 1922

Dollars per Cwt.	Frequency
Total	405
.60	1
.75	23
.80	15
.85	18
.90	33
1.00	264
1.10	17
1.25	22
1.30	3
1.40	1
1.50	4

was the principal cause of this increase. The facts are presented in Table 19. Here again we have a very distinct prevailing price but at the same time significant variations both above and below the typical rate. The lower rates may be partially explained from the fact that at the beginning of the season pickers are relatively plentiful. By the time cotton picking is well under way the demand for pickers will have increased and the price for picking likewise. Toward the close of the season when the farmers are "scrapping", the bulk of the pickers will have moved on to regions of better picking. By this time the cotton grower may have to pay his very highest price. He has but little cotton left, it is slow picking, and the pickers are relatively scarce. Rather than have it left in the field as a dead loss it is necessary for him to pay a much higher price than that paid for the greater part of his picking.

Figure 28. Picking cotton on a blackland farm. This operation must be done by hand and requires a great amount of labor. Assuming that the farmer hired 20 bales picked and the hands averaged 200 pounds a day each, it would take one hand 150 days or five hands 30 days to harvest his crop.

Even though the demand for labor is keen at chopping and picking time only about 80 farmers spoke of having any difficulty in securing the help needed. Farmers may not have gotten all of the help at the very time desired but no one seemed to have suffered from being unable to secure help. There seemed to be more difficulty during 1922 in securing hands for chopping than for picking. The situation in this regard will vary from year to year depending upon the nature of the season. If it is unusually wet during the chopping season, then the farmer will get behind and find it difficult to secure help. During a nice dry fall cotton will stand for some time in the field without suffering any very great loss from not being picked, but weeds and grass must be removed from the crop promptly or the yield will be materially reduced. The nature of the work to be done will have much to do with the nature of the demand for help.

One hundred and thirty farms out of 500 exchanged some labor. This was limited very largely to the threshing of small grain. In no case did I find an exchange in the major operations like cultivating, chopping, hoeing, and picking cotton. The cause for this is apparent since such operations demand immediate attention on all of the farms in the community at the same time. On the other hand, threshing is a type of work which may be postponed for a number of days or even weeks without any very great loss. Moreover, the crew for threshing is more than the average farmer can furnish and at the same time it is needed for a short duration only, perhaps a fraction of a day. It does not pay the farmer to get out and hire a full crew when an exchange of a few hours with a neighbor will take care of this job for the entire year.

It was found to be the general practice for the farmer to furnish his

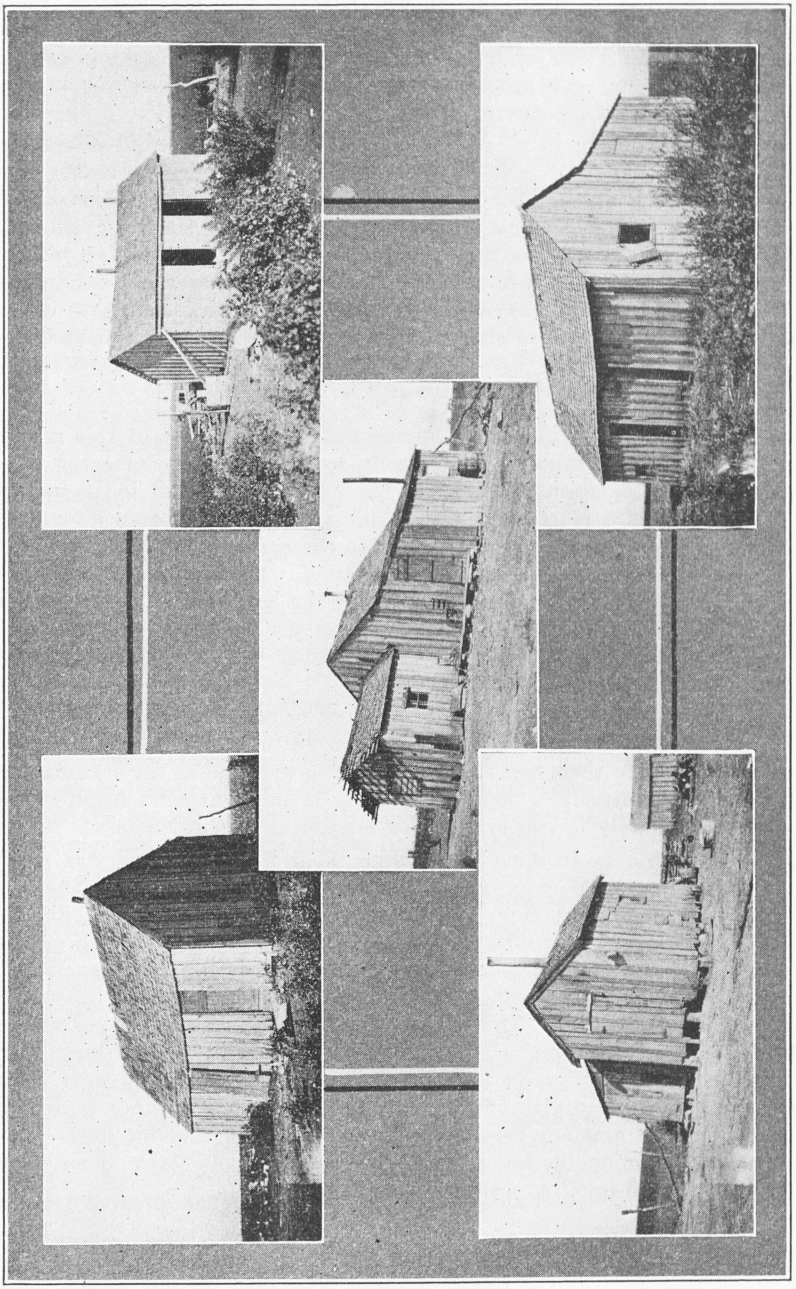


Figure 29. A group of "shacks" in which farm labor is housed, principally extra labor.

extra help with a "shack" for shelter and in the majority of cases with wood and water. In a few cases (31 were reported) the farmer boarded his extra help. In a few instances he furnished credit for taking care of the necessary living expenses while at work. In rare cases help was hauled out and back from nearby towns.

The housing and general care of special labor would impress one, especially if not familiar with conditions, as being very meager. The "shacks" in which extra labor is generally housed are for the most part single rooms with board walls, floor and roof. Fortunately the great bulk of the extra farm labor is on the farm during the summer and fall months at a time when very little protection is needed against weather conditions. The standard of living of the majority of these laborers is such that it is a question as to whether more elaborate provisions would be appreciated and cared for.

FARM LABOR ORGANIZATIONS

No labor unions as such exist among the farm laborers of this region. The extra labor is furnished very largely by negroes, supplemented by a few whites and Mexicans. The need for labor is seasonal in its nature and is supplied by a migratory type of laborer. Laborers do not work in very large groups, neither do they work for the same person nor remain at the same place for a very long period of time. The regular laborers are more fixed relative to a job and place, but they are isolated on individual farms where the conditions and considerations are likely to vary considerably. Neither the type of laborer, nor the nature of the work is conducive to labor unions among farm laborers.

A considerable number of farmers visited belonged to the Farm Labor Union of America, but this is a labor union neither in practice nor principle. According to their constitution and by-laws, it is as an organization "strictly and exclusively a business body". It is a farmer's organization interested principally in the problem of marketing his products.

It is well to keep in mind in handling labor that it is a service which cannot be disassociated from the individual as a human being. The conditions under which the laborer works influence not only his health and his welfare, but that of his family. The ideal situation is one in which mutual respect, confidence, and consideration exists between the laborer and the farm operator. The laborer should be encouraged to take a real interest in the operation of the farm. This should be more easily accomplished among regular laborers than among extra help. Fortunately a very large part of extra help on cotton farms is paid for on the basis of actual work done. If one picker is able to pick 500 pounds of cotton while another is able to pick only 250, the first one receives twice as much for what he does. This is rewarding labor on the basis of accomplishment. All farm labor, however, does not lend itself so well to such a scheme.

CHAPTER VII

CAPITAL INVESTMENT IN FARMS

CLASSIFICATION

The capital investment of the 500 farm units studied has been divided into two main divisions, **fixed** and **movable** capital. This classification is based more on the physical aspects of the capital goods in these two groups than on the function which they perform.

Fixed Capital

Fixed capital includes land and permanent improvements. Some of the aspects and characteristics of farm lands have already been treated in Chapter IV. The consideration here is one of value aspects as it relates itself to the total capital investment of the entire farm. Permanent improvements are composed chiefly of the various types of farm buildings, fences, wells, tanks, and terraces. This classification includes along with the land all of those improvements which are more or less permanently fixed to and tend to blend with and become a part of the land. In fact, it is quite often difficult to evaluate land apart from these improvements. Especially is this true in old settled regions where the land is in a high state of cultivation.

Movable Capital

Movable capital* as here used refers to that type of capital which is less fixed and more liquid than fixed capital. It is generally bought and sold independently of land and permanent improvements. It is quite commonly spoken of as working capital and includes such major divisions as farm implements and machinery, work stock, other productive livestock, supplies and cash and credit for current operating expenses. It is that part of the capital outlay which lends itself more readily to changes. One of the big problems of the farmer is that of securing the best proportioning of the several factors with which he must deal. His skill and ingenuity as a manager has its best opportunity for expression through the handling of movable capital. It is that part of the investment most subject to the influence of the human factor. Much more freedom is offered here for expansion or contraction in response to the prevailing economic conditions than is true of land and permanent improvements.

The importance of movable capital varies greatly with the type of agriculture. In ranching, this type of capital comprises a very large part of the ranchman's investment and the test of his ability to produce will be in the selection and utilization of those capital goods classified as movable. This is not so true of the cotton farmer. Almost ninety-five per cent of his investment is in land and permanent improvements and his chief concern is in the most efficient use of these, his most expensive factors.

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*B. Youngblood and A. B. Cox, "An Economic Study of a Typical Ranching Area on the Edwards Plateau of Texas," Texas Agricultural Experiment Station, College Station, Texas, Bulletin No. 297, Chapter X, p. 256.

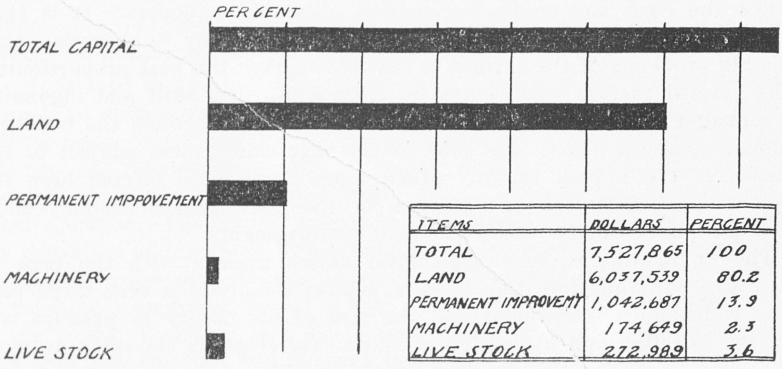
There are good reasons for following the classification suggested above. In taxation the division of farm capital into fixed and movable is recognized. Fixed capital is generally designated as real property or real estate, while movable capital is considered personal property. In rental contracts between the owner and the tenant a distinction is recognized between fixed and movable capital. It is invariably the practice for the third-and-fourth operator to furnish the movable capital and for the owner to furnish the fixed capital.

It should be explained that in this survey it was found practically impossible to arrive at a satisfactory figure which would represent the capital outlay for current operating expenses. Much of such capital is borrowed for periods of time varrying all the way from a month to one year, while in the case of cotton picking and cotton ginning the expenses incurred are often taken out of the proceeds of the sale of the cotton and cotton seed. It is comparatively easy to ascertain the current expenses against the operation for the year, but this by no means corresponds to the amount of cash or credit necessary to meet such obligations. To derive a satisfactory figure for this item would require a detailed accurate analysis of the current expense account. For this reason only the tangible farm property assets have been included in the capital investment of the farms here given.

The inventory of all farm property of the 500 farms surveyed shows an investment of slightly above seven and one-half million dollars. Of this amount 94.1 per cent is fixed capital, leaving 5.9 per cent remaining as

FIGURE 30

DISTRIBUTION OF CAPITAL IN FARM PROPERTY



ITEMS	DOLLARS	PERCENT
TOTAL	7,527,865	100
LAND	6,037,539	80.2
PERMANENT IMPROVEMT	1,042,687	13.9
MACHINERY	174,649	2.3
LIVE STOCK	272,989	3.6

movable capital. Figure 30 shows a more detailed division of the total capital investment into land, permanent improvements, farm machinery, and livestock. From this it is seen that land comprises four-fifths of the total, while permanent improvements, farm machinery, and livestock rank in the order named. Table 20 compares these items for Texas and Rockwall

County both absolutely and relatively for a period of thirty years. The trend would be more forcibly emphasized if a longer period were taken, but the necessary data are not available. The facts given, however, show that in both areas land comprises the greater part of the total investment, and has made a decided increase both absolutely and relatively since and including 1900. Permanent improvements have remained relatively about the same for the State, while in Rockwall County there was a big decline from 1910 to 1920. Farm machinery appears to have remained relatively about the same for both areas, while a relative decline in livestock is shown for both. This drop was abrupt in Texas from 1900 to 1910 but only slight from 1910 to 1920, while in Rockwall County the decline has been marked and gradual, going from 12.8 per cent in 1900 to 4 per cent in 1920. This condition one would expect to follow as incident to a more complete development of a one-crop system.

TABLE 20

Value of Farm Property for Texas and Rockwall County for 1920, 1910, 1900*

Item	Year	Total Value		Percent	
		Texas	Rockwall County	Texas	Rockwall County
All Farm Property	1920	$4,447,420,321	$19,055,149	100.0	100.0
	1910	2,218,645,164	6,088,312	100.0	100.0
	1900	962,476,273	3,122,058	100.0	100.0
Land	1920	3,245,208,649	16,552,747	73.0	86.9
	1910	1,633,207,135	4,679,810	73.6	76.8
	1900	591,550,802	2,235,670	61.6	71.6
Farm Buildings	1920	454,964,670	1,271,608	10.2	6.7
	1910	210,001,260	700,846	9.5	11.5
	1900	100,222,811	369,450	10.4	11.8
Machinery	1920	154,320,996	448,730	3.5	2.3
	1910	56,790,260	144,435	2.5	2.4
	1900	30,125,705	116,300	3.1	3.8
Livestock	1920	592,926,006	782,064	13.3	4.1
	1910	318,646,509	563,221	14.4	9.3
	1900	240,576,955	400,638	24.9	12.8

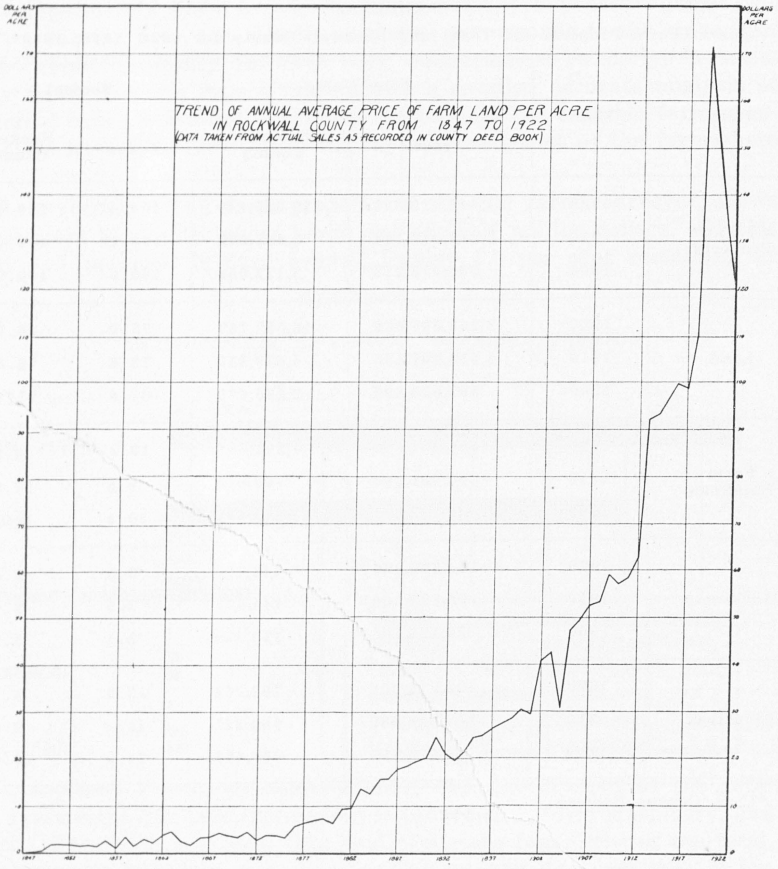
*U. S. Census Reports.

Investment in Land

As has been observed, land constitutes four-fifths of the total investment in the capital outlay of the 500 farms studied. The value per acre varied from $25 to over $200, with an average of slightly above $113. If an array be made of all the farms on the basis of value per acre the greatest number fall in the class of $125 to $149. This would indicate that the farms falling in the classes of lower value have a larger acreage than those falling in the higher-valued classes.

In getting at a figure for land value an attempt was made to approximate as closely as possible the present conservative market value of the land. Where a farm had sold recently in the neighborhood it was used as a check. Care was taken to explain that it was neither the assessed

FIGURE 31



value nor a high inflated value which was wanted, but the price for which the land would likely sell under the usual terms and conditions of sale.

It is only more recently that land has reached such a high price and come to constitute such a relatively high per cent of the total investment.

In Figure* 31 the trend of land prices for Rockwall County is graphically portrayed over a period of seventy-five years. The trend is decidedly upward and exhibits some very interesting features in its course. Land values were uniformly low for the first twenty-five years, showing but little inclination to take an upward trend. Fluctuations, however, were relatively violent although absolutely small and insignificant. It is easy to understand how a slight absolute increase in the value per acre of land would register a relatively large increase when the average price per acre for the entire period from 1848 to 1872 inclusive was $2.41. Undoubtedly permanent improvements such as buildings and fences made up the greater part of the value of farm land for this period. The second period from 1873 to 1897 inclusive exhibits a noticeable tendency for land values to climb. The average value of land for this period is $14.38 per acre as against $2.41 for the preceding period. This was a period of railway expansion in the State. It was during this time that important railways reached Dallas and furnished an outlet to the market as well as an inlet for people, barbed wire, and improved machinery. This was followed by a rapid development of cotton production in the blackland belt. Cotton production more than trebled itself during this period. The steepest incline in land values, however, appeared during the last twenty-five years. The peak of this period is exaggerated by the highly inflated condition of prices reached during the war and the abrupt decline which followed in 1920. This is the first time in the entire period that land values show an abrupt decline.

In land we have the most fixed and durable of all types of capital invested in the farm. It has value because it yields products and services which ultimately satisfy human wants. This income both physical and psychic may be thought of as being perpetual and as having a direct expression in the price paid for land. In other words the present value of land is the sum of an infinite series of future discounted incomes. For this reason a study of land values over a long period of time should give a clearer understanding of these forces whose resultant has determined the trend taken, and should suggest in a measure at least, the behavior of future values. Undoubtedly much of the recent distress as well as other periods of agricultural depression among farmers has been caused by an altogether too optimistic view on the part of land purchasers. Quite often the immediate short-time view is taken and projected into the future with an entirely too low rate of discount. This means that there is a vital need for a more scientific and accurate method of forecasting land values. Dr. R. T. Ely, Director of the Institute for Research in Land, University of Wisconsin, em-

*This graph is based on actual land sales as recorded in the deed records of Rockwall County. No correction for changes in the purchasing power of money has been made. The data are presented in the appendix table IA.

phasized this fact in an address before the annual meeting of the American Statistical Association, in Washington, D. C., December 28, 1923. Dr. F. A. Buechel in Bulletin No. 318, "Relation between Rents and Agricultural Land Values in Theory and in Practice,"* goes into a somewhat detailed discussion of the factors entering into land value and suggests a method of more accurately measuring it. Any effort to stabilize and place land values on the correct basis is fundamental in agricultural progress.

Investment in Permanent Improvements

Permanent improvements compose almost 14 per cent of the total value of farm property invested in the 500 farms considered. The greater part of this is made up of the various kinds of farm buildings. Here as in land and to a much greater degree it is difficult to arrive at a separate and satisfactory value for such improvements. Where improvements had been made recently the cost of construction was taken. In the great majority of cases an inventory value was taken for the beginning and end of the year. In other words an attempt was made to arrive at the present value of improvements taking into consideration their original cost of construction, present age, and state of repair.

TABLE 21

Investment in The Various Permanent Improvements

Items	Number	Average Investment per Unit	Total Investment per Item	Percentage of Total
Total			$1,042,705.05	100.0
Owner's House ..	172	$1,810.27	311,366.25	29.9
Tenant's House..	642	587.62	377,254.87	36.2
Shacks	150	115.68	17,352.30	1.7
Barn	569	341.53	194,330.98	18.6
Smoke House....	353	45.39	16,023.14	1.5
Granary	56	108.26	6,062.80	.6
Garage	221	71.40	15,780.35	1.5
Poultry House...	210	24.18	5,078.09	.5
Other Buildings..	157	48.89	7,676.11	.7
Fences	344	88.06	30,293.36	2.9
Wells and Cisterns	1,073	46.29	49,672.68	4.8
Open Tanks.....	15	71.49	1,072.49	.1
Wind Mills	43	249.80	10,741.63	1.0

*"The Relation Between Rents and Agricultural Land Values in Theory and in Practice," by F. A. Buechel, Bulletin No. 318, Texas Agricultural Experiment Station, College Station, Texas.

The nature, the number, the average and the relative value for each group as well as the average value per unit are given in Table 21. A few outstanding features are emphasized when these groups are compared. There are 172 owners' houses as against 642 tenant houses. In addition to these there are 150 laborers' "shacks." The total value of owners' houses is $311,356.25 while that of tenants' is $377,254.87. The average value of the owners' house is $1,810.27 as compared with an average value of $587.62 for the tenant. In other words, the owner's house is valued on an average at three times that of the tenant house. The striking thing about this comparison is the meager provision made for farm laborers. The 150 "shacks" have an average value of $115.68. The majority of the laborers for this section are negroes and many of them are employed for a few weeks during the chopping and picking seasons. These "shacks" are in use for a short time each year; consequently the owner puts no more into this type of improvement than is absolutely necessary.

The question arises as to whether the value of the farm home should be included as a part of the total farm investment on which a money income is expected. The claim is often made that the farm home is not a production but a consumption good. It is further argued that the farmer has no more right to include his home as a part of the investment in his business than does a banker or merchant to include his home as a part of his business investment. Be this as it may, it cannot be denied that the farm home is peculiarly and intimately associated with farming as a business. The farm unit is not complete without the farm home. The productive efficiency of the farm would be materially impaired if adequate provisions for housing the farm family were neglected. The farm family furnishes the greater part of the farm labor. Regular and extra laborers are invariably housed on the farm and the houses and "shacks" in which they live are included in the farm investment as productive goods. In computing the cost of farm products family labor is generally based on the rate paid hired labor. It should follow then that at least that part of the home required for housing farm labor, whether it be family or hired, should be considered a productive good and as a part of the investment on which a money return is expected. Each farm should be treated as an individual case. Adjustments should certainly be made for those farm homes in which the investment is in excess of the necessary requirements of the farm.

The investment in barns, 18.6 per cent of the total in permanent improvements, is low. Of course the need for expensive barns in a cotton section is small compared with that in a region where more diversified, or a more specialized type of farming like dairying is done. In a great many cases the barns were dilapidated, and gave ample evidence of neglect. The minimum requirement should be room sufficient for housing the farm animals and storing an ample supply of hay and feed. As a rule the buildings other than the houses and barns were meager and quite often entirely lacking. Only 56 out of 500 had a granary, and only 210 provided any sort of a house for their poultry. There were more garages than hen houses. Fences,

cisterns, open tanks and wind mills form slightly above eight per cent of the total investment in permanent improvements.

A casual observer passing through the blackland cotton belt is impressed with the absence of fences on the farms. The facts of the survey support such casual observation. Of the 500 farms, 344 reported fences as a part of the investment in permanent improvements. This represented an average investment of $88.06 per farm and if distributed over the 500 farms it amounts to 56.9 cents per acre. This condition is in sharp contrast with that of the early settlement of the prairies. At that time the fence was a very necessary and important part of the farm investment. In fact, it was only after the coming of barbed wire that the prairies were rapidly cut up into farms. But with the rapid development of cotton and the decline of the cattle industry the need of fences came to be less felt. The livestock on these farms today is confined very largely to work stock, the milch cow, and a few hogs and chickens.

Farm Machinery

Farm machinery in the Blackland cotton belt is a very small consideration in the total farm investment, being only 2.3 per cent of the total. Automobiles have been included to give this figure. The automobile is both a production and a consumption good but will be treated here as a pro-

TABLE 22

Investment in Farm Machinery

Item	Number	Average Investment per Article	Average Annual Investment per Item	Percentage of Total
Total			$174,649.58	100.0
Plows	1,664	$ 8.54	14,195.69	8.1
Planters	852	15.00	12,776.33	7.3
Cultivators	997	17.35	17,208.12	9.9
Harrows	382	9.20	3,510.75	2.4
Stalk Cutters	274	16.81	4,605.67	2.6
Rakes	94	13.50	1,270.18	.8
Balers	23	84.79	1,950.48	1.1
Mowing Machines	160	26.79	4,274.42	2.4
Grain Drills	88	59.20	5,178.72	2.9
Binders	83	64.05	5,728.04	3.2
Wagons	909	31.58	28,682.84	16.4
Automobiles	314	138.00	43,644.62	24.9
Harness	1,045	16.21	16,934.26	9.7
Hoes	1,369	.65	733.07	.4

duction good. In detailed work an effort will be made to separate and properly allot the two types of services. Plows, planters, cultivators, stalk cutters, and wagons make up the greater bulk of the cotton grower's necessary equipment. The kind, number, value, etc., of these are given in Table 22. Farms which attempt to diversify must keep a greater variety of machinery, and quite often such machines are used very little in proportion to their costs. This is an item often overlooked by those who would have the farmer of such regions diversify more and more.

TABLE 23

Investment in the Various Types of Livestock

Kinds of Livestock	Number	Average Investment per Head	Annual Average Investment per Group	Percentage of Total
Total		.	$272,989.34	100.0
Work Stock.....	2,137	$89.49	191,243.00	70.0
Cattle	1,189	24.43	29,032.00	10.6
Hogs	2,092	15.20	31,789.39	11.7
Sheep	165	7.40	1,221.00	.5
Poultry	28,193	.70	19,678.95	7.2

Investment in the Various Types of Livestock

This division of the total investment like that of farm machinery is very small, being 3.6 per cent. Table 23 shows the nature of the investment in the different groups of livestock. Work stock makes up the major part of this investment. The other animals are composed chiefly of milch cows, meat hogs, and the farm flock of chickens and turkeys. There are a few sheep, one-half of one per cent. One would easily predict this from

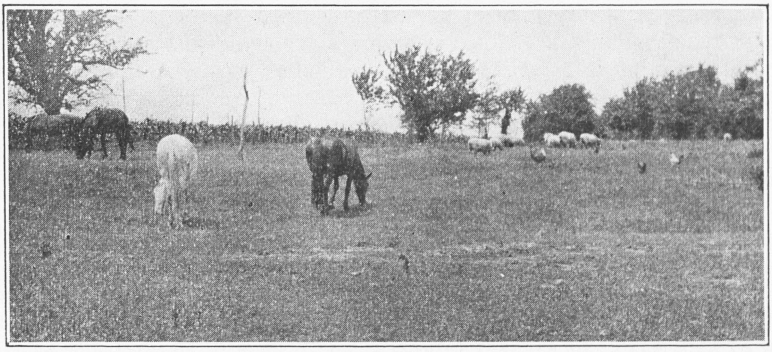


Figure 32. Farm livestock grazing on a small blackland pasture. No cotton farm is complete without a few acres on which work stock, cows, and other farm livestock may be grazed.

a knowledge of the very small amount devoted to pasture and the character of the fencing which prevails. The fences are not only meager but poor. They generally consist of a few barbed wires for holding cattle and horses, and have all the ear marks of being temporary. In a very few cases are they suitable for holding hogs and sheep. It is not uncommon to find the few hogs which are kept confined in a pen or small lot. It seems to be rather common practice for the cotton farmer some time after killing his meat hogs to pick up enough pigs, say three or four, from another farm for making his meat the next year. Poultry constitutes a considerable part of the investment in livestock and could no doubt, under present conditions, be increased with less cost and more profitably than any other type of livestock.

CHAPTER VIII

FARM CREDIT

No very great amount of wisdom is required to account for the recent rapidly increasing need for farm credit. It is an incident in the marked change which has taken place in agriculture during the past half century. This change has been characterized very largely by the passing of the self-sufficing or domestic type of farming to a more industrial or commercialized type. The first step in this development was a rather universal improvement in the technical processes of farming. This change called for more power and machinery both to replace and supplement man and horse power. This, along with an increased demand for farm products, has resulted in an increased demand for farm lands and consequently a rapid increase in the value of such lands. The use of better and more machinery, a higher grade of both seed and livestock, and higher-priced land have increased very materially the need for capital in the business of farming. With this increased demand for capital the need and importance of agricultural credit facilities have become imperative.

In the creation of credit facilities for agriculture the aim should be not to make credit easier, but more adequate, better adapted to the needs of the several types of farmers and stockmen throughout the country. It is useless perhaps to remark that credit is an instrument in business to be used and not abused. A wise credit policy will render just as great a service by withholding credit when it is not needed as by granting it when needed. There are a great many farmers today who would be in a much better position financially if it had been less easy for them to have secured credit during the recent period of inflation.

Quite often the advocates of some rural credit reform in their enthusiasm will offer it as a relief for all of the farmer's many troubles. It would be very unusual to find a case where the economic distress of farmers was due to a single cause and more unusual to find that cause due wholly to a lack of credit facilities. In the great majority of cases, distress among farmers is due not to a single cause, but a combination of many causes and for this reason relief may not be expected from any one improvement. Enlarged credit facilities offer only one of a great many requisites by which the farmer's economic condition may be bettered. The all-important matter is that the farmer be able to secure the amount of credit needed, at the time and for the time needed, and at a reasonable rate.

There is no disgrace attached to the use of credit as such. It is not uncommon, however, to sense an apologetic attitude among farmers relative to their indebtedness. This must be due primarily to the lack of a full appreciation of the function and purpose of credit. It is no disgrace for a farmer to find himself in need of more capital than he has been able to accumulate. And it certainly is a compliment for him to be able to secure the use of this needed capital from those who have been fortunate enough to

have a surplus above their current needs. It is to the advantage of all that this capital be employed productively instead of remaining idle. It increases the efficiency of the farmer who borrows, gives a return to the lender, and contributes to the sum total of consumers' goods. In other words, adequate agricultural credit facilities play a very important role in the financing of agriculture and no apology is due for their existence.

The very fact that agriculture has remained very largely self-sustaining throughout the greater part of its history, both as to capital and labor requirements, and even at the present time operates on a relatively small amount of borrowed capital compared with other industries, accounts in no small way for this mental attitude among farmers. Such an attitude is disappearing and will become less and less evident as farming comes to be considered and treated more and more as a business not only by the farmers themselves, but likewise by the rest of the business world.

CLASSIFICATION OF TYPES OF CREDIT NEEDED

No fixed and rigid classification can be made of the types of agricultural credit needed. The classification made depends upon the basis of consideration. For this reason the kinds of credit may be divided into several groups. If one has in mind the economic function of credit it may be divided into productive and consumptive credit; if the time aspect is to be considered, then long-term, intermediate, and short-term are the usual divisions made; or if it is wished to emphasize the immediate use made of the loan, it may be land loans, loans on livestock, loans on machinery, loans for making a crop, etc. Also the sources of the loan may be used as a basis of classification. At any rate, this brief treatment will suffice to indicate that no very fixed and rigid classification of the types of agricultural credit can be made unless properly explained.

It should be remarked in this connection that the type or types of agricultural credit for any particular area should conform as closely as possible to the needs peculiar to the prevailing type of farming for that area. The credit needs, as well as the credit possibilities of an area, cannot be satisfactorily analyzed unless such considerations as farm tenure, farm investment, farm turnover, labor requirements, and marketing problems are kept in mind. For example, the kind and amount of credit needed by the ranchman of the Edwards Plateau is quite different from that of a farmer in the blackland cotton belt. To begin with, there are certain significant differences in the operators themselves: their investment, the nature of their product, the time of turnover, their labor requirements and marketing problems are widely different.

THE FARM CREDIT SITUATION IN ROCKWALL COUNTY

Before taking up separately the several types of loans used by the farmers in Rockwall County, it would be helpful to get a conception of their credit situation as a whole. A summary of the situation is portrayed in Figure 33. This groups all loans roughly as loans on land, loans from banks, loans from individuals, and loans from merchants. The loans on

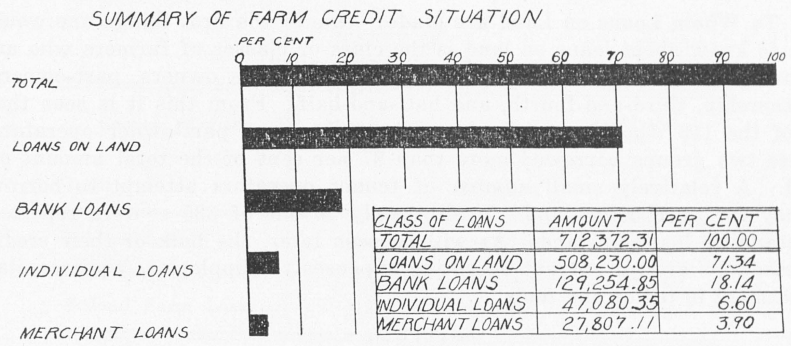
land represent the long-term credit, while those made by banks, individuals, and merchants represent short-term credit. Some of this credit, as will be seen from further analysis, is used for intermediate needs.

TABLE 24

Summary of Farm Credit Situation

Class of Loans	Number of Loans	Amount of Loans	Percent of Total	Average Amount of Loans	Prevailing Rate of Interest
Total	641	$712,372.31	100%	$1,111.34	
Loans on Land	115	508,230.00	71.34	4,464.02	8%
Bank Loans	325	129,254.85	18.14	397.71	10
Individual Loans....	57	47,080.35	6.60	825.97	10
Merchant Loans....	144	27,807.11	3.90	193.11	

FIGURE 33



As observed from the table accompanying Figure 33 the total amount borrowed by the 500 farmers interviewed for all agricultural purposes is $712,372.31. This is a considerable sum when thought of alone, but when broken up into 641 loans or when compared with the total investment it is a relatively small amount. The total investment in land, permanent improvements, livestock and machinery of the farms surveyed is $7,527,930.05. The total indebtedness reported is 9.46 per cent of the total investment. Even though this is relatively small in amount, it is nevertheless a very important consideration in the farming operations of this section.

In presenting the facts revealed in the survey loans will be treated under two main divisions: long-term, and short-term credit. Special emphasis will be placed on the source, purpose for which used, nature of security, time, rate, amount, etc., of the credit used.

LONG-TERM CREDIT

Loans on Land

Long-term agricultural credit is roughly defined as that credit by which loans are secured for the purpose of purchasing land and permanent improvements. At present such credit is furnished almost entirely by private individuals, mortgage companies, Federal Land Banks, Joint Stock Land Banks, State and Trust Companies, and Insurance Companies.

As shown by the summary of the credit situation, loans on land amount to 71 percent of all loans. Just here it is well to explain that the survey does not claim to show the complete amount of loans against the 500 farms, but rather the credit situation of the farmers who operate them. Evidently the loans on land would run considerably higher if the owners of all rented farms could have been interviewed and their indebtedness ascertained. This was hardly possible and not altogether necessary since our interest here and throughout the survey is centered primarily about the man on the land. It is very evident that this type of credit is important enough among operators to demand as thorough understanding of it as it is possible to gain. This will be approached through a consideration of the borrower, the lender, the time, rate, and security of loans.

To Whom Loans on Land are Made: One of the first things one would like to know about loans on land is the class or classes of farmers who are securing these loans. Table 25 groups operators as owners, part-owners, partnership, third-and-fourth, and half-and-half. From this it is seen that 99 of the 115 who borrowed were either owners or part-owner operators. These two groups borrowed more than 87 per cent of the total amount on land. A relatively small number of tenant operators attempt to borrow money for purchasing land. In fact, only 15 out of 335 renters reported outstanding loans on land. As will be seen later, the bulk of their credit transactions are for current operating expenses to supplement their capital investment in teams and tools.

TABLE 25

To Whom Loans Are Made

Class	Number of Loans	Total Amount of Loans	Per Cent of Total Amount
Total	115	$508,230	100
Owner	69	282,418	55.6
Part-owner	30	162,432	31.9
Partnership	1	7,000	1.3
Third and Fourth	12	48,380	9.5
Half and Half	3	8,000	1.6

From Whom Loans on Land are Secured: At present there seems to be ample sources from which to secure loans on land and permanent improvements. First mortgages or first lien notes on good, well-improved farm land offer an attractive and safe type of investment. A great many private loan companies have been organized to handle this type of credit alone. Private individuals having surplus capital seek this form of investment. The Federal Farm Loan Banks recently established by Congress are public institutions which make it possible for farmers to secure loans on land at a relatively low rate of interest, for a long term of years with a very satisfactory repayment plan. It is not the aim of these banks to take the place of all other sources of land credit, but rather to supplement and influence all other institutions through their operation.

Source of Loans on Land: The chief sources of land credit utilized by the farmers of Rockwall County are shown in Table 26. The relative amounts are likewise given. Private loan companies rank highest both for number and amount of loans. This classification also includes life insurance companies which make a business of handling this type of loan. Individuals account for no small part of the capital furnished for financing such loans. Loans from this source are to be encouraged in so far as reasonable rates, a suitable length of time, and a satisfactory repayment plan can be had.

TABLE 26

Source of Loans on Land

Source of Loan	Number	Amount	Total per cent
Total	115	$508,230	100
Private Loan Co.....	70	315,740	62.01
Individual	33	152,690	30.04
Federal Farm Loan...	12	40,400	7.95

At first one is at a loss to explain the small amount furnished by the Federal Farm Loan Bank, but when it is remembered that this is a young institution and that it was recently involved for months in litigation, it is less difficult to understand. The low rate of interest, the long-term feature, and the amortization plan of repayment which is provided by this system make it a very attractive source of land credit.

Nature of Security Given: The prevailing type of security for loans on land in this area is either a first mortgage or a first lien note. The results of the answers given are shown in Table 27. No attempt has been made here to distinguish between the two since they are essentially the same. The safety of both depends upon the size of the margin of the conservative market value of the property over and above the outstanding loan. It is easy to see that if the amount of the mortgage approximates very closely

that of the market value of the property given as security that such paper will suffer greatly during periods of depresssion in land values. For this reason it is the policy of institutions handling land loans never to make loans for more than 50 to 75 per cent of the appraised value of the land.

TABLE 27
Security Given for Loans on Land

Sources of Loans	Mortgage or Lien	
	First	Second
Total	104	8
Private Loan Co.	67	
Individual	25	8
Federal Farm Loan Bank.	12	

Out of 112 reporting on the nature of security only eight reported second liens. These were taken by individuals. In the majority of cases such security is held by the individual who has sold a farm and is intimately acquainted with all the conditions and circumstances involved. Individuals and institutions are not looking for such paper as an opportunity to invest their capital. During the recent period of deflation in land prices a number of persons holding such paper found it to be worthless. The writer's attention was called to more than one case where second lien notes taken against land when at its peak price were later found to be practically worthless. Such security is good so long as there is adequate collateral behind it and no longer.

Length of Time for Which Loans on Land are Made: Table 28 exhibits the different institutions from which land loans are secured and the usual time for which such loans are made in each case. The majority of loans

TABLE 28
Length of Time on Land Loans

Length of Time	Individual	Private Loan Co.	Federal Farm Loan Bank
Total Number of Answers	30	68	12
Under 5 years	19	1	
5-9 years	10	17	
10-14 years	1	49	
15-19 years			
20 years and over		1	12

made by individuals are for less than five years. Not infrequently such loans were secured by a series of first lien notes made for a period of one, two, three, four, and five years. The more common period among private loan companies was ten years. Only one out of 68 loans was given for as long as twenty years. The period from 15 to 19 years is blank. The Federal Farm Loan Bank is the only institution all of the loans of which are made for a period of over twenty years. To meet the need of farmers for a longer time on land loans is one of the express purposes of the Federal Farm Loan system.

Rate of Interest Paid on Land Loans: The rate of interest paid by farmers for loans on land varies between a minimum of 5 per cent and a maximum of 10 per cent. The prevailing rate for loans made by both individuals and private loan companies is 7 to 8 per cent, the more common being the latter rate. In no case was the rate charged by the Federal Farm Loan Bank more than 7 per cent, while the more recent loans were reported at 6½ per cent.

Table 29 gives the distribution according to rate paid for the three groups reported.

The opinions of farmers were solicited as to what they considered a fair and reasonable rate on well secured long-time land paper. There were 326 answers given. None of them mentioned a rate higher than 8 per cent, only 49 a rate higher than 6 per cent, while 277 mentioned a rate of 6 and lower.

TABLE 29

Interest Rate on Land Loans

Rate	Number of Loans at the Various Rates		
	Individual	Private Loan Co.	Federal Farm Loan
Total	27	69	10
5	1		
6		1	
6½		6	4
7	3	16	6
7½	1	7	
8	17	34	
8½		1	
9			
10	5	4	

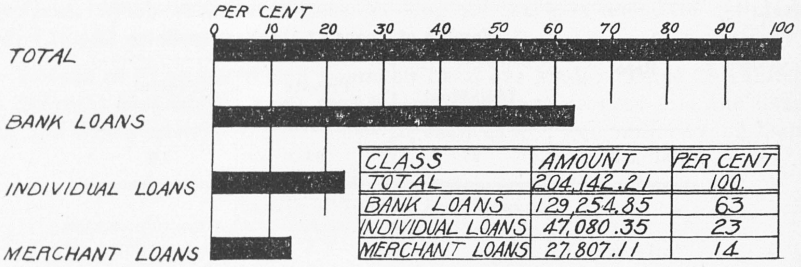
SHORT-TERM CREDIT

Principally Loans for Current Operating Expenses

Short-term agricultural credit is roughly defined here as consisting of those loans which are secured and utilized for the purpose of meeting the current operating expenses for the growing and the marketing of agricultural products. The intensity of the need for this kind of credit varies with the different types of farming. For example, in regions where diversification is practiced, or among dairymen whose labor requirements are rather uniformly distributed and whose receipts are coming in regularly throughout the year, the operator is in a better position to meet the bulk of his obligations as they arise. This cannot be said of cotton farming with its high demand for seasonal labor which must be met at the time employed, and with the bulk of receipts coming in over a single period generally of short duration. The majority of growers depend on credit almost entirely for meeting their current need for extra labor. In fact, it would be a poor policy even though the farmer had sufficient means, for him to keep money on hand and idle for the purpose of meeting a temporary need. It would be much better business to invest his money for the year or for a longer period and borrow for the three or six months needed. This would not only be better for the individual, but better for society in general, since it would make more capital available for productive purposes.

FIGURE 34

SUMMARY OF SHORT TIME CREDIT SITUATION



CLASS	AMOUNT	PER CENT
TOTAL	204,142.21	100.
BANK LOANS	129,254.85	63
INDIVIDUAL LOANS	47,080.35	23
MERCHANT LOANS	27,807.11	14

The amount of short-term loans is relatively small compared with the amount on land, but it is by far the more significant when the number of loans are considered. There were only 115 loans on land, but 526 short-term loans. This is an average of more than one loan to each farmer.

The summary of the short-term credit situation for the year 1922 is indicated by Table 30. This groups the loans into three classes based on the source from which they were secured. This, however, does not show what the actual short-term credit situation for the time given above, since it does not include something over $150,000 which had been carried over from previous years like 1919 when the boll worm completely destroyed

a great many crops in this county just previous to harvesting, and 1920 when the ruinous drop in price made it practically impossible for farmers to pay their debts. There was nothing to be done by the banks, but carry these farmers over and hope for improved conditions. By the close of 1922, farmers were beginning to pay off these old debts. Bankers interviewed in this regard stated that they seldom suffered a loss from such risks. As a class, farmers do not go into bankruptcy and will pay if given sufficient time.

TABLE 30

Summary of Short-Time Credit Situation

Class	No. Loans	Amount Borrowed 1922	Per Cent of Total	Av. No. Months	Prevailing Rate
Total	526	$204,142.21	100		
Bank Loans	325	129,254.85	63	6.9	10
Individual Loans	57	47,080.35	23	7.8	10
Merchant Loans	144	27,807.11	14	3.7	

Source of Short-Term Credit: The chief sources of short-term agricultural credit for this area are the local banks, individuals, and merchants. The local banks furnish considerably more than one-half of the total amount of all loans. More will be said in regard to the relation of the local bank to the current farm credit problem later in this chapter.

Purpose for which Short-Term Loans Are Made: Table 31 gives the purposes, as answered by farmers, for which short-term loans were used. Such classifications as making a crop, general farm expenses, and living expenses are not distinct and overlap considerably. Each, however, has a meaning peculiar to itself in the mind of the farmer. Under the term making a crop, he includes such items as feed, labor for chopping, hoeing

TABLE 31

Purposes for Which Bank and Individual Loans are Made

Purpose	Bank	Individual
Total	338	55
Making a Crop	246	40
General Farm Expenses	45	2
Living Expenses	31	6
Purchase of Livestock.	8	1
Purchase of Machinery.	7*	1
Purchase of Land	1	5

*Exclusive of Automobiles.

and picking, or money expended for any other operation connected with the growing of his crop. By general farm expense is meant about what it says, the freedom to use the loan in any manner so long as it is connected with the farm business. When the farmer reports that his loan was used principally for living expenses, he has in mind such necessary purchases as groceries and clothing used by himself and family, particularly during the spring and summer months. Merchant credit is used almost exclusively for this purpose.

By far the greater number of loans of both banks and individuals are used for making a crop. Relatively few loans are used for purchasing livestock and machinery and still fewer of the short-term loans are used for buying land. As has already been observed, loans on land are taken care of very largely by institutions organized and operated for this one specific purpose.

It is the policy of the local bank to take care first of all of the farmer's current needs for growing crops, and more particularly the money crop, which in this area is cotton. They are not organized and equipped to handle the credit needs of the farmer for purchasing work stock, productive livestock, machinery, improvements, and repairs. These items form a type of capital which in the inventory has been called movable capital. It is not used in a single, but in a number of years. The effect of the use of such capital on the farmer's income is realized not in one, but is spread over a number of annual incomes. Evidently, then, the easiest repayment plan for loans spent for this type of capital would be that which approximated most closely its productive period. There is no local institution organized to take care of this credit need. At present it is being carried, in a way, by the banks, merchants, and individuals who loan money to farmers. The need for this kind of credit is nothing like so great among cotton farmers as among ranchmen and livestock farmers; nevertheless, it is important and needs to be provided. The recently established intermediate Credit Bank in connection with the Federal Loan Banks is an effort to supply this type of credit to the farmer. These banks do not loan directly to farmers or individuals. They can only discount paper from a National or State Bank, trust company, agricultural credit corporation, incorporated livestock loan company, and cooperative credit or marketing associations of agricultural producers.

At the time this survey was made the Intermediate Credit Banks did not exist*. The farmers of Rockwall County at that time were not and have not since organized to take advantage of this type of credit. From subsequent interviews it is apparent that the local banks are not in sympathy nor generally disposed to help farmers make use of this credit. There is a good reason for this attitude. They would have to pay 5½ per cent interest and are not permitted to make more than 1½ per cent. They consider it poor business to borrow money at 5½ and loan it out at 7 per cent, when they can let their deposits out at 10 per cent and in case they need

*Agricultural Credit act of March 4, 1923, 67th Congress, Senate 4280.

to borrow to supplement their deposits, they can generally secure money for a lower rate than 5½ per cent without restrictions. It seems very likely, therefore, that if the cotton farmer is to take advantage of the credit facilities furnished by this new institution he will have to organize and operate cooperative credit or marketing associations.

Rate of Interest on Short-Time Loans: The prevailing rate of interest charged both by banks and individuals was found to be 10 per cent. Of 328 reports only ten paid less than this rate. No very accurate figure could be secured for the cost of store credits. Quite often this was carried in the form of a credit account. In cases where the time was considerable a note was executed and interest charged generally at the rate of 10 per cent.

Length of Time for Which Short-Term Loans Are Made: The most common period for which notes were made among these farmers was 6 to 9 months. It was not unusual for a farmer to make arrangements for his credit at the first of the year and secure certain sums on this along as needed during the making of his crop. The average time for loans made by banks was found to be 6.9 months while that of individuals averaged 7.8 months.

Opinions from a number of farmers were secured on the question of what time they needed credit for the purpose of making a crop and general farm expenses. Out of 316, there were 219 who gave answers covering periods between 3 and 13 months. There were 97, however, who thought a longer time was needed. The greatest number for any single period was that of 6 to 9 months. It was the opinion of the local bankers as well as a great many farmers that the time given was adequate. The great majority of farmers sell their cotton as it is ginned, not altogether because they have to do so to settle obligations, but because a great many choose to do so. Where the farmer does not belong to a well organized and well equipped marketing association this is perhaps as good a policy as any. The wiser and more business-like course of action would be that of joining with his fellow growers in perfecting an efficient marketing system of his own. No farseeing banker should object; in fact, he should encourage farmers to sell efficiently as well as to grow their products economically.

How Short-Term Loans Are Secured: There is probably no industry where the honesty and integrity of the individual counts for so much as in that of farming. Table 32 substantiates this claim. Out of the 396 answers on the kinds of security given, 266 were personal. The personal element enters as a very significant consideration. Evidently the banker considers the farmer a very high type of moral risk. In this the farmer's reputation for honesty and industry is one of his greatest assets. The local banker is in close daily touch with farmers and has an excellent opportunity to study their individual needs and to know them personally. In a certain sense his relation to the economic needs and welfare of the community is similar to that of the physicians to the health of the commu-

nity. Not only does he supply the credit needs of the farmer for productive purposes but is in a position to advise him wisely in the use of this credit.

TABLE 32

Security of Short Time Loans

Kind of Security	Bank Loans	Individual Loans	Total No. of Loans
Total	359	37	396
Personal	239	27	266
Livestock and Crop	40	1	41
Lien on Crop	29	2	31
Signature of Landlord	12		12
Livestock	8	1	9
Livestock and Machinery	7	1	8
Insurance Policy	4		4
Others		5	5

There are a considerable number of loans secured by liens on crops, livestock, machinery, etc., or combinations of these. This is asking no more of the farmer than is asked of other business men who are required to furnish satisfactory collateral as security. It is to the advantage of the farmer that as much of the element of risk as possible be eliminated from short-term loans. This should not only make it easier to secure money, but should make it possible for the bank to loan at a lower rate.

Merchant Credit

The amount of store credit utilized for the year was 14 per cent of the total amount of short-term credit. Much of this was carried by the store

TABLE 33

Merchant Credit

Class	Number Having Credit	Amount of Credit	Average Amount	Average Time in Months
Total	144	$27,807.11	$193.10	3.7
Owners	29	7,735.63	266.75	2.6
Part-Owners	11	4,412.27	401.12	1.9
Partnership	1	250.00	250.00	
Third and Fourth	72	10,059.96	139.72	3.7
Half and Half	31	5,349.25	172.56	4.7

as an open account against the farmer. In a great many cases no note was given nor was any interest charged. In most cases where accounts ran over a number of months interest was charged. In some cases the farmer made arrangements with the merchant to furnish him so much per month up to a certain amount during the season. Under such conditions more than likely a note would be executed and interest charged. When interest was charged it was generally at the rate of 10 per cent. There did not appear to be any very definite or uniform practice among merchants as to the amount, time, rate of interest, etc., on accounts carried for farmers.

Loans made by merchants are characteristically small. It is utilized by all types of farmers, but more especially by the half-and-half operator. In this classification are 72 such farmers, and 31 of them make use of store credit.

It was observed from interviews with farmers and bankers that an attempt is being made to get away from this type of credit in so far as possible. It is better for both the farmer and the merchant to do a cash business. This will mean that the credit situation will be handled very largely by the bank, an institution whose business it is to be informed on such matters, and which is in a much better position to judge as to what policy to pursue. If credit is made too easy by merchants, the risk will become greater and the losses increase. Somebody must pay for this risk. It is very clear that those who buy the service must pay for it.

RELATION OF THE LOCAL BANK TO THE FARM CREDIT PROBLEM

Any attempt to present the farm credit situation, and particularly of the area under consideration, would be incomplete without placing special emphasis on the position of the local bank, and more especially its relation to the credit needs of the farmer for current operating expenses. The aim of the few thoughts offered here will be to point out the need for and briefly suggest the possibilities for a better understanding of the credit situation, both on the part of the banker and the farmer. Such an understanding should lead to a mutual confidence which is basic in this, as well as in all other business transactions.

The farmer needs credit. The local bank is the institution from which the bulk of this credit is at present secured. What evidence can be furnished the banker of this need and the use to be made of this credit and what assurance can be given of the ability to repay? The bank should know the nature of the credit needs and credit conditions of the farmer. This will not only enable the bank to better judge as to the farmer's need for, capacity to use, and ability to repay loans made to him, but it will place the bank in a position to better diagnose the farmer's situation and advise more intelligently with him. The farmer should know more about the bank. He needs to become better informed as to the contacts it makes, the nature of the services it renders, and the conditions and obligations under which these services are rendered.

No one is in a better position to furnish the local bank with the information which it needs than the farmer himself. This can be done very

satisfactorily through the use of a financial statement. A statement similar to that required of member banks by the Federal Reserve would serve this purpose. This statement should be supplemented by a detailed cropping system, indicating the crops grown, the acres devoted to each, and the general farm methods practiced. From this information the banker will not only know what the farmer's resources are, but what use he is making

No. 11 R. B.

CUSTOMER'S STATEMENT FOR CREDIT
AGRICULTURAL

Statement of .....

Address .....

For the purpose of procuring credit, from time to time, with the above bank for my negotiable paper, or otherwise, I furnish the following as being a fair and accurate statement of my financial condition on the .....

day of ....., 19....

ASSETS			LIABILITIES		
Description REAL ESTATE OWNED	VALUATION		INCUMBRANCE ON REAL ESTATE	AMOUNT	
PERSONAL PROPERTY OWNED			INCUMBRANCE ON PERSONAL PROPERTY AND OTHER LIABILITIES		
Horses			Incumbrance on Live Stock		
Cattle			Owing other banks		
Hogs			Owing your bank		
Sheep			Accounts Payable		
Mules			Notes Endorsed for Friends		
Machinery and equipment			All other debts		
Grain and Hay					
Cotton					
Sundries					
Liberty Bonds and Notes					
All Other Personal Property					
Cash			Total debts		
			Net worth		
Total			Total		
Dated			Signed		
Insurance on Property					
Life Insurance Carried					
To Whom Payable					

General remarks regarding above statement to be made by Cashier.

CASHIER

Statements submitted to Federal Reserve Bank must either be signed Originals or Certified Copies. If copies are furnished following certificate must be officially signed by member bank:

*We hereby certify that the foregoing is a true and correct copy of a signed financial statement of the above mentioned individual, firm or corporation now on file in this bank.

(Name of Member Bank) .....

(Official Signature) .....

Figure 35. Copy of statement required by Federal Reserve Bank.

or plans to make of them. This is not thought of as placing an extra burden on the farmer. To the contrary, it is suggested as an opportunity for him to add materially to his credit rating with the bank. The farmer who has his business well in hand by some approved method of records and accounts should find it easy to furnish such information.

There are no good reasons why farmers should not have a credit rating as well as other types of business men; in fact, there is ample argument for it. A statement to the bank like the one suggested above would not only serve as a local credit rating, but at the same time form a nucleus from which a state or national rating could be created. Such information would be treated as confidential between the individual farmer and his banker.

The farmer needs to know more about the bank, the nature of its organization and operation, the contacts it makes, the nature of the services which it offers, and the conditions under which these services are rendered. No one is in a better position to furnish the farmer with such information than the banker himself. There are no secrets nor dark mysteries about the banking business. Banking like farming or any other legitimate business has a right to live and prosper on the merits of the services which it renders.

In Figure 36 an attempt is made to give a graphic picture of the trend and movement of the principal accounts of four local banks studied in the area surveyed. These may correctly be classified as direct, or indirect types of services rendered by these banks. Banks furnish a safe de-

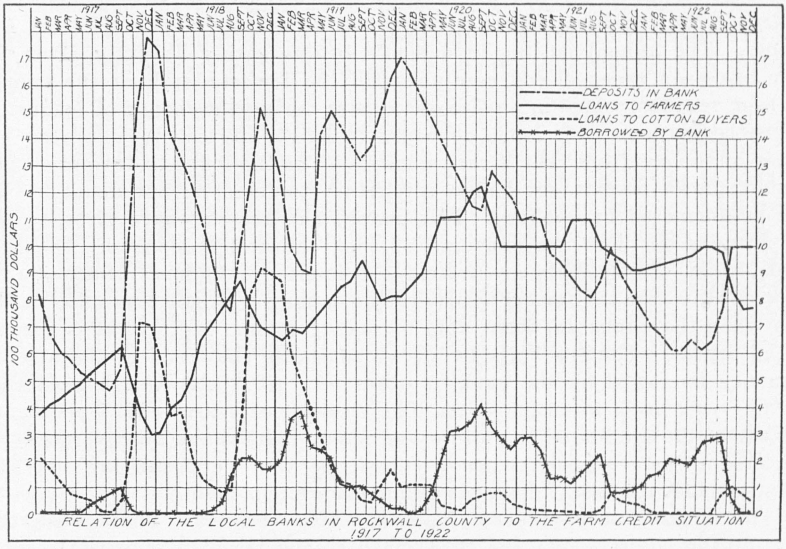


Figure 36. Relation of country banks in Rockwall County to the farm credit situation, 1917-1922, inclusive.

posit for the surplus funds of their customers and at the same time keep a detailed and accurate account of checks made against such deposits. They make loans to farmers and others, principally farmers. They make loans to cotton buyers. In addition they borrow money when necessary to supplement their deposits in order to more adequately finance their trade area. This latter is not classified as a direct, but as an indirect service. The bank

serves its community through the money it borrows from its city correspondent bank, Federal Reserve Bank, or from other sources by making available more capital than the community itself supplies. Every farmer who either deposits money in or borrows money from the bank has a part in making this picture what it is and will be interested in following the relation which these accounts seem to bear to one another.

They are considered over a period of six years, 1917 to 1922 inclusive. The unit of time is the month. The average of the four banks for each account is shown for this unit of time. A longer period than six years might have been better, but the data were not available in every case. This is thought to be of sufficient length, however, to register desturbances extending over a year or longer, while sufficient detail to indicate the nature and extent of seasonal fluctuations is provided by the monthly average.

Attention will first be centered about bank deposits. The capacity of the bank to make loans depends very largely upon the amount and distribution of its deposits. In the diagram given in this connection the graph representing bank deposits is indicated by a dash-dot line. From this a characteristic seasonal fluctuation will be observed. The peak of deposits invariably comes in the fall at the time the cotton crop is being marketed locally. This generally occurs between the months of September and December. The annual decline in deposits begins rather abruptly after the peak has been reached and continues till the lowest depth of the trough has been reached, which in most cases occurs during the month of August.

In connection with bank deposits, it is of interest to note the behavior of the solid line which shows the trend of the loans to farmers. The amount shown here is not loaned altogether to farmers, but about 95 per cent as estimated by bankers. This graph, too, has its characteristic peak and trough, but just the converse of that shown by deposits. In other words, when the deposits are lowest the loans are highest. Such a condition means that the farmer's heaviest demands for credit are made at the time when the banks are least able to satisfy them. More light is thrown on the picture when the barbed line, which shows the trend of the amount of money borrowed by the bank, is observed. At a glance it is seen that this line runs high when loans are high and deposits are low. This means that the banks are forced to go into the money market and borrow money to supplement their deposits when at any time these deposits are not sufficient to meet the credit demands being made upon them.

The dotted line represents loans to cotton buyers. There were two years during the six, 1917 and 1918, when a considerable demand was made on the banks by local cotton buyers. This was during the war period and at a time when prices were soaring and evidently inviting a great deal of speculation. The abrupt decline in prices, with a narrow margin per bale on cotton, left a number of banks in a rather embarrasing situation. Having gone through this experience, one would expect them to be much more conservative in making such loans. Transactions of this character have been materially discouraged by the very wide margin required of the buyer on the part of the bank, as well as other restrictions. At any rate, it is very

evident that the policy of the banks has undergone a decided change during the past few years in regard to this practice.

The condition of the banks at the close of the year 1922 was good. Although loans to farmers continued to be high, bank deposits showed a substantial margin about this account. The money borrowed by the bank had been reduced to a minimum and a very small amount was outstanding to local cotton buyers. Considering the favorable position of cotton since, this situation has undoubtedly continued to improve.

SUMMARY AND CONCLUSION

This region has long since passed from the pioneer speculative stage to a more fixed and permanent type of farming. The land is fertile and for the most part in a fair state of cultivation. There is need, however, for an active program of soil improvement. Much could be accomplished to this end through a system of terracing, ditching, weed control, the growing of more legumes, and the raising of more livestock. The productive efficiency of a great many farms could undoubtedly be improved if ample facilities for storing feed and for housing livestock and farm implements were provided. Along with these needs an ample water supply for both family and farm animals should be mentioned. Attention is called to these, because of their close relationship to the credit needs and credit conditions of the area.

As has been previously pointed out, the need for loans on land is quite amply provided. The great need here is not that credit be made cheap and easy, but that the time and conditions of repayment be made to suit the conditions of the farmer's business. He should be permitted, as well as encouraged to make payments on his loans during his successful years and not be forced to meet a fixed payment during his lean years when he finds it difficult to take care of his current obligations. It is possible to make land credit too easy. Under such conditions, land prices would increase to such an extent as to absorb any advantages of a low rate of interest or easy terms.

The short-time credit needs of the farmers in this region are met by local banks, individuals, and local merchants. The bulk of this credit is and will very likely continue to be furnished by the local bank. For this reason, stress has been placed on the necessity of creating and maintaining close contact between the farmer and the banker. It is felt that the local bank could well afford, where the volume of business would justify, to employ the services of a man well trained and equipped to make contacts with its farmer customers. Such a man would not need to confine his service entirely to credit transactions, but should be able to advise with the farmer on any of his business problems.

As has already been pointed out, the greater bulk of credit used by the farmers of this region is spent either for buying land or for meeting the current operating expenses of the farm. Intermediate credit, or credit needs for purchasing teams, tools, productive livestock, and for the general repair

and upkeep of farm buildings and equipment, is either entirely neglected or inadequately provided.

The casual observer passing through the blackland belt cannot avoid the glaring contrast of the deep fertile soil with its almost inexhaustible capacity for producing products with the neglected appearance of the farmstead and country side. This impression created from a superficial glance is generally substantiated by a more critical and close examination. It is not uncommon to find buildings in need of paint or of being repainted. The need of other repairs is probably as common.

The writer does not intend to convey the idea that this condition is due to a lack of adequate intermediate credit facilities. Other factors, such as the managerial ability of the farmer, farm tenancy, size of farm income, etc., are related in a very material way. Any amount of credit would not prevent some farmers from leaving their farm machinery exposed to the weather throughout the year, nor would it cause them to paint the house or cover the barn. I do believe, however, that a great many farmers could and would use such credit profitably if it were made available. In this connection it is felt that the local bank has an opportunity of expanding its services and increasing its usefulness. The suggestion is that the banker classify the credit needs of the farmer and serve him on the basis of these needs. This would mean a recognition and appreciation of his intermediate needs as well as his short-time current needs. Specifically, it would mean that the local bank assist the farmer, where circumstances justify it, in taking advantage of the credit facilities provided for by the Intermediate Credit Banks established in connection with the Federal Farm Loan Banks by the agricultural credit act of March 4, 1923.

CHAPTER IX

FARM INCOME

In a consideration of farm income at least three main problems confront the farmer. Briefly and simply stated these are: the problem of growing the product, the problem of selling the product, and the problem of spending the income derived.

The first problem with which the farmer is confronted is that of making the most efficient use of his reasources in land, labor, and equipment. It is the problem of growing farm products most economically, that of securing the greatest output per unit of input on the greatest possible volume of products. To accomplish this, the farmer must carefully study and analyze his farm business as a whole and in detail. This he cannot do satisfactorily without the aid of complete detailed records of his various operations. He is in no position to make intelligent changes in his farm plans and practices until he has attempted to measure the influence of the various factors used on the final result obtained. This is essentially and fundamentally a farm management problem.

A second problem grows out of and naturally follows the first. After farm products have been grown as efficiently as possible there is the further task of converting them into the best farm price possible. This involves the whole problem of salesmanship or marketing. Too often the farmer considers his work done when the crop has been grown and at this point turns over to some outside agency the task and responsibility of marketing it. Such action may greatly reduce the possibilities of increasing his income.

It is not enough, however, that farm products be economically grown and efficiently marketed. Here a third problem arises. The first two concern themselves primarily with the making of an income, while the third has in mind more particularly the spending of it. It is one thing to make an income, but an entirely different thing to spend it wisely. The majority of farmers feel, no doubt, that if they could only make a satisfactory income there would be ample opportunity for spending it. Evidently this is true, but the problem of getting the greatest amount of satisfaction out of the farm income remains. An income wisely and effectively spent may contribute as much or more to worth-while living than a much larger income poorly spent.

The immediate discussion will be confined primarily to the first problem. All three, however, must be kept in mind in any attempt to get a correct perspective of farming or to form a satisfactory agricultural policy.

It is the farm as a business unit, an income-producing unit, that we wish to consider here. The goal of the individual farmer is the greatest possible net income to himself or the farm as a whole. It is through this income that he builds his home, improves his farm, pays his debts and establishes his credit. This goal is too important to be approached in a hap-

hazard manner. It demands careful study from every possible angle. The farmer needs to have a working knowledge of the physical requirements of his several operations, the source and nature of his receipts, and the nature and distribution of his expenses. As has been said above, to secure such information demands that accurate and appropriate detailed records and accounts be kept of the entire farm operation. From these records complete costs may be calculated and correctly distributed. Knowledge of this sort should enable the farmer to compare not only the results of his different enterprises from year to year, but those of his farm as a unit. It should lead to the application of good business principles and methods in his farming.

Quite often farmers are encouraged to labor under a false economy. Various activities are promoted through campaigns and contests in which the chief emphasis is placed on physical volume produced instead of net value created. It is the common practice in such contests to place the premium on the production of the greatest physical volume with little or no effort to count the cost. The fallacy of such a practice is in the assumption, not stated but inferred, that with the exception of land, the factors of production are free and unlimited and that they may be applied so long as any increment in yield is produced. Any intelligent farmer on a moment's reflection recognizes the weakness of this practice. He knows that the law of diminishing returns begins to apply very early in most agricultural operations. Good common sense teaches him that it will not pay after a certain point is reached to use more labor and capital in producing a crop, even though a slight increase may be secured by additional units of these factors. He knows that both the extensive and intensive use of the factors of production depend upon their relative dearness. He certainly would not cultivate with as great a degree of intensity, other things being equal, land costing $25 an acre as he would land costing $200 an acre. What he needs to know is the best combination of all the factors employed in order to secure the greatest net return to them. To attempt to reach this goal through the creation of physical volume alone might be compared to the wisdom of a tailor who might undertake to cut an expensive pattern by using only one blade of his scissors. It is distinctly the old-time remedy of increased production for economic ills and at best can serve only as a counter-irritant. It tends to obscure the real problem of the farmer and make it more difficult to interest him in work of a constructive character. It stresses not only physical volume, but physical volume per acre, when it is income per man or farm that is desired.

Let it be understood, however, that this is not an effort to decry or discourage the farmer in any attempt to secure greater productive efficiency. There is not only great need, but great possibilities of improvement in this connection. But the problem should be approached on a sound economic basis. First of all, the goal sought is the production of the greatest net value, not for any specially treated enterprise, but for the entire farm as a unit. It is increased net value that is desired. Increased production of physical units may or may not contribute to this end. Assuming that prices

remain the same, an increase in production with costs remaining stationary, declining, or increasing relatively less than production, an increase in net value will be produced. On the other hand, if costs decrease while production remains stationary, increases, or decreases relatively less than costs, an increase in net income will result.

This raises the question as to the importance and necessity of measuring the relation of the several factors of production in their probable influence on the net income of the farm. The farm as a physical operating unit is composed of land, permanent improvements, farm machinery, work stock, other livestock, crops, supplies, and cash or credit for current operating expenses. To this physical plant add the human element, labor, and managerial skill, and an operating unit is perfected. These factors will differ greatly both in quantity and quality, even among farmers of the same area. Not only this, but the method of combining and using them in the operation will vary considerably. What, then, is the nature of the influence of some of the more significant factors to the net income of the farmer? For example, one would like to know if there is a correlation between the size of the farm in acres and net income, and if so, to know whether or not it is positive or negative and if large enough in either case to be significant. In like manner one would wish to examine net income per acre and a number of influences such as the yield, total costs, value of permanent improvements, grade of land, etc., per acre, to this primary in fluence. Information of this nature should be studied and interpreted in the light of the farmer's possibility of changing or modifying his farm operation to take advantage of such influences. In other words, if it should be found that the net income per acre bears a high degree of correlation to the net income of the farm, then the practical question arises as to what influences are most closely related to the net income per acre and the further question of how the farmer may make the best of them through his farm plans and practices. Particular attention will be devoted to this feature later in this chapter.

The term, net income, as here used is a figure obtained by subtracting the current farm operating expenses from the gross receipts from all sales of farm products for the year. Adjustments were also made for any difference in inventories at the beginning and end of the year. This adjustment included depreciation on permanent improvements, livestock, and farm machinery. No attempt was made to subtract family labor. The figure given approximates roughly the amount the farm operator and his family had available to spend.

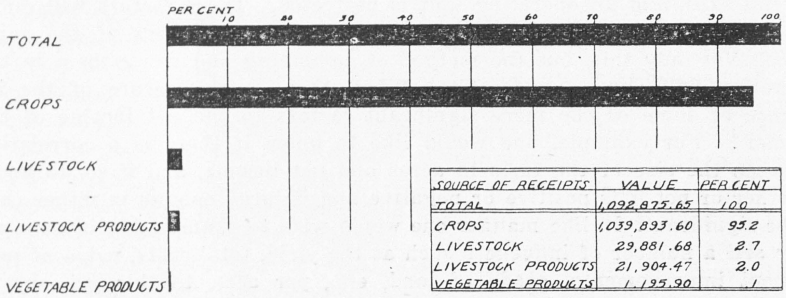
In a study of farm income, it is well to know the nature and source or sources of such income. Is it derived from crops, livestock, or from a combination of the two? If from crops, what crops? A similar inquiry could be made for livestock. The data which follow, for example, are a splendid illustration of what is to be expected among crop farms, and in this case a single crop, that of cotton. This brings us to a consideration of the sources of farm receipts.

SOURCES OF FARM RECEIPTS

Some of the things one would like to know about the farm receipts from a given farm or group of farms is their source, volume, and distribution with special emphasis placed on net receipts. Figure 37 shows the source, and gross receipts with corresponding percentages for all farm commodities by groups on the 500 farms surveyed. The most striking fact here revealed is the very high percentage of receipts derived from

FIGURE 37

GROSS FARM RECEIPTS



SOURCE OF RECEIPTS	VALUE	PER CENT
TOTAL	1,092,875.65	100
CROPS	1,039,893.60	95.2
LIVESTOCK	29,881.68	2.7
LIVESTOCK PRODUCTS	21,904.47	2.0
VEGETABLE PRODUCTS	1,195.90	.1

crops as contrasted with those from livestock. If truck and fruit be combined with crops, likewise if livestock and livestock products be combined, then it is seen that 95.3 per cent of all farm receipts come from crops and only 4.7 per cent come from livestock. A more detailed analysis of

TABLE 34

Rank of Various Commodities as a Source of Gross Farm Receipts

Commodity	Per Cent of Total Receipts	Per Cent of Farms Selling Each
Total	99.93	
Cotton	82.38	99
Cotton seed	7.44	95
Corn	3.35	67
Oats	1.13	49
Eggs	.92	52
Poultry	.85	51
Hogs	.75	26
Butter	.64	41
Work stock	.60	7
Hay	.57	30
Cattle	.48	29
Wheat	.26	10
Meat	.23	7
Honey	.19	4
Truck	.06	7
Fruit	.04	3
Sheep	.04	2

these groups is shown in Table 34. Here the commodities are arrayed in the order of their importance, as indicated by the percentage of the gross receipts produced by each. The last column shows how generally each commodity is sold. Combining the two ideas, one sees that lint cotton not only constitutes slightly above 82 per cent of all recipts, but that it is sold by 99 per cent of the 500 farms. Commodities like eggs and poultry form a very small part of the total farm receipts, yet enter into the sales of more than one-half of all the farms, and because of this gen-

TABLE 35

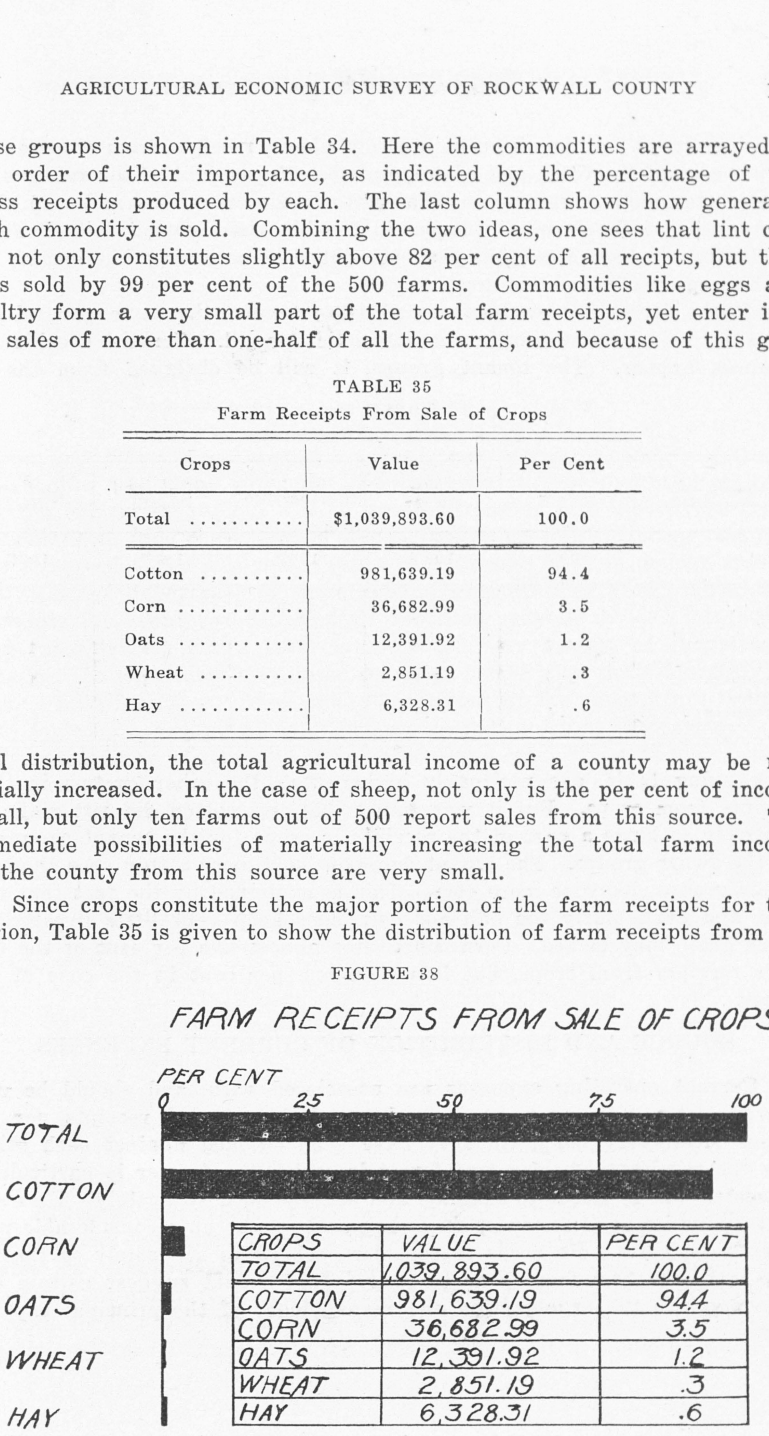
Farm Receipts From Sale of Crops

Crops	Value	Per Cent
Total	$1,039,893.60	100.0
Cotton	981,639.19	94.4
Corn	36,682.99	3.5
Oats	12,391.92	1.2
Wheat	2,851.19	.3
Hay	6,328.31	.6

eral distribution, the total agricultural income of a county may be materially increased. In the case of sheep, not only is the per cent of income small, but only ten farms out of 500 report sales from this source. The immediate possibilities of materially increasing the total farm income of the county from this source are very small.

Since crops constitute the major portion of the farm receipts for this region, Table 35 is given to show the distribution of farm receipts from the

FIGURE 38



principal crops. As has been pointed out above, receipts from crops exceed 95 per cent of the total, and of crops almost 95 per cent of the receipts are from cotton alone. This means that cotton and cotton seed make up about nine-tenths of the farmer's income in the blackland cotton belt of Texas. Evidently his best opportunity at present for increasing his income lies in the improvement of this crop.

If the farms are grouped according to tenure, the same general features as to receipts remain characteristic for all. Certain specific differences appear. The tenant groups, it will be observed from the ac-

TABLE 36

Sources of Farm Receipts in Percentages by Tenure

Classs of Commodities	Owner	Part-Owner	Partnership	Third and Fourth	Half and Half
Total	100%	100%	100%	100%	100%
Crops	91.0	93.2	94.7	96.6	98.0
Livestock	4.7	3.9	4.3	2.0	1.0
Livestock Products	3.9	2.8	1.0	1.4	1.0
Vegetable Products	.4	.1			

companying table, are noticeably higher than the other groups in their receipts from crops. But it was found that lint cotton did not make up relatively so large a part of the receipts in crops for the tenant groups as for the owner groups. The tenant, however, sold more cotton seed than the owner groups, likewise more corn. This is explained by the fact that tenants, and particularly the half-and-half class keep very little livestock to which grain may be fed. Corn constitutes almost five per cent of the tenant's receipts from crops, but less than one per cent in the case of the owner.

SOURCE AND DISTRIBUTION OF CURRENT EXPENSES

Current operating expenses are associated with, and should be considered along with gross farm receipts. Neither gross receipts nor expenses mean very much till they have been checked against each other. It is the resultant of these two forces in which the farmer is particularly interested, but he needs to examine and analyze each separately. He needs to know his items of expense, since they go to make up a considerable part of his total costs. He needs to consider such items separately so that he may compare them from year to year. This should suggest certain improvements in the organization and management of the principal expense items.

TABLE 37
Summary of Current Farm Expenses

Classes	Amount	Per Cent
Total	$384,971.96	100
Labor	155,874.77	40.5
Repairs	17,262.65	4.5
Miscellaneous	211,834.54	55.0

In the treatment which is to follow the current operating expenses for the 500 farms studied will be grouped roughly into labor, repairs, and miscellaneous, and these groups will be broken up into their separate items for a more detailed analysis. Table 37 expresses both in dollars and percentages the importance of these general groups. The group **labor,** which accounts for about two-fifths of all expenses, may be divided into regular and extra labor. Extra labor is composed very largely of chopping and picking. In fact, these two items comprise better than three-fourths of the money paid for labor. More than 50 per cent of the expenditure for labor was for cotton picking alone. This would indicate that the farmer is less able to take care of this kind of work than any other phase of his operation. In others words, cotton picking is the most limiting factor in the number of acres the family can handle.

TAELE 38
Current Expenditures for Labor

Classes		Amount	Per Cent
Total		$155,874.77	100
Regular		36,542.05	23.5
Extra	Chopping	34,810.20	22.3
	Picking	84,522.52	54.2

Expenses for repairs have been grouped under three headings, machinery and equipment, house and other buildings, and fence, as shown in Table 39. These make up a small per cent of the total expenses and of them the machinery and equipment and buildings comprise the greater part. Fences form a very small part of the farm investment in the blackland region of Texas and naturally the repairs for this item would be small.

MISCELLANEOUS EXPENSES

Under this heading are grouped a great many items of general farm expenses which are not related in such a way that they can be grouped under a single account, as in the case of labor or repairs. From Table 40 it may readily be observed that these items vary greatly, both as to amount and as to their general use among farmers.

Before leaving the consideration of miscellaneous expenses it is felt that attention should be called to the item of insurance. True enough, this item, as may be observed, is both relatively and absolutely small, but the apparent possibilities for improvement in this connection justify the added emphasis given.

This item of expense is made up almost entirely of premiums paid to private companies for fire insurance on farm homes, barns, livestock, feed, seed, etc. This is well and good, but evidently there are many more who should and would carry fire insurance if it could be had at a lower rate. Only 97 farmers out of 500 carried fire insurance. This suggests the possibility of a farmers' local mutual aid association to take care of this need. In such an organization the losses would be met by a direct assessment on each member prorated on the basis of the amount of the insurance which he carries with the association. The risks would need to be conservatively made. Not more than two-thirds of the cash value of property should be insured and a limit should be placed on the absolute maximum amount which could be carried by any individual member.

Such associations are possible only when a sufficiently large number of farmers are willing to cooperate and pool their interests relative to fire insurance on certain classes of farm property. The elimination of overhead expenses for salaries, soliciting, etc., coupled with a large volume of local business should operate to give a very low and attractive rate of fire insurance to farmers.

TABLE 39

Expenditures for Repairs

Item	Amount	Per Cent
Total	$17,262.65	100
Machinery and Equipment.	10,446.85	60.5
House and Other Buildings	6,213.80	36.0
Fence	602.00	3.5

A more detailed account of the various items for the groups given above are displayed in Table 41. This table ranks the various items of expense in order of their magnitude and shows not only the number of farms out of the 500 to which such an expense applies, but also the per cent such item is of the total. Items such as labor, fuel, taxes, and repairs

TABLE 40

Distribution of Miscellaneous Expenses According to Importance

Item of Expenditure	Number of Farms	Amount	Per Cent of Total
Total		$211,834.54	100
Interest	376	60,858.13	28.73
Fuel	494	36,714.73	17.33
Tax	450	31,773.92	15.00
Ginning	491	30,049.50	14.19
Feed	270	24,807.35	11.71
Seed	350	12,082.48	5.70
Threshing	248	5,248.94	2.48
Insurance	97	3,523.09	1.66
Baling	93	2,221.90	1.05
Veterinary	200	1,943.01	.92
Twine	326	1,655.43	.78
Breeding Fees..	69	491.00	.23
Sundry	11	465.06	.22

may be considered as charges which are more or less fixed. A relatively large amount of labor, both regular and extra, will always be required where the principal crop is cotton. It can readily be seen, however, if instead of depending upon regular and extra labor, the owner or individual responsible for the cultivation of the land lets it out on the half-and-half basis, the need for both regular and extra labor will have been reduced. It is a method of making the labor more permanent and available. There is great possibility of materially reducing such items as interest on borrowed money and feed for work stock. To accomplish this end will require that the farm be made more self-sustaining. Not only will it attempt to produce all of the feed necessary for the work stock and other farm animals, but much of the food supply for the family. Such a policy will tend to eliminate the item of feed, greatly reduce cash necessity for family living expenses and in both cases reduce the amount of money borrowed, and hence the amount of interest to be paid. It is recognized that it will always be necessary and advisable at times for the cotton farmer to borrow money for purchasing land and equipment, and for partially financing some of his production processes such as chopping, picking, and marketing cotton. But at all times the very greatest judgment should be exercised in the use of credit.

TABLE 41

Current Farm Expenses Arrayed According to Their Importance

Item	Number of Farms	Average Expenditure per Farm	Total Expenditure	Per Cent
Total		$769.94	$384,971.96	99.97
Labor	450	346.38	155,874.77	40.48
Interest	376	161.85	60,858.13	15.80
Fuel	494	74.32	36,714.73	9.54
Taxes	450	70.61	31,773.92	8.25
Ginning	491	61.20	30,049.50	7.80
Feed	270	91.88	24,807.35	6.44
Repairs	419	41.19	17,262.65	4.48
Seed	350	34.52	12,082.48	3.14
Threshing	248	21.16	5,248.94	1.36
Insurance	97	36.32	3,523.09	.92
Baling	93	23.89	2,221.90	.58
Veterinary Bill	200	9.71	1,948.01	.50
Twine	326	5.08	1,655.43	.43
Breeding Fees	69	7.12	491.00	.13
Sundry	11	42.27	465.06	.12

THE RANGE AND DISTRIBUTION OF FARM INCOMES

A frequency table showing the range and distribution of farm incomes by types of farmers shows a number of interesting things. Taking them up in the order given in the table, the owner groups show the widest range of possibilities. There is slight evidence of their possibility of making a higher income than their closest competitors, the third-and-fourth group, and very good evidence of their sustaining greater losses. This is to be expected since owner operators have more invested in the operation and are taking a much heavier risk. The comparatively high number of owner operators showing a minus income is due very largely to the large amount of interest paid on loans for purchasing land and especially for those farmers who had purchased while land was unusually high. Cases were found where farmers had paid as much as $300.00 per acre for land and were paying 8 per cent interest on the loans against it. This was the equivalent of $24.00 cash rent per acre. Yes, even more, for in addition to paying interest on the loans he must also pay taxes on the same land. A number of owner operators are renting money instead of land and

where purchases were made on the peak of land prices they are paying dearly for the privilege of ownership.

The observations in the case of the partnership group are too few to warrant conclusions.

The range of possibilities among tenant operators is not so wide as that among owner groups. In the case of third-and-fourth farmers, the pos-

TABLE 42

Range and Distribution of Net Income of Farm Operators

Class	Owner	Part-Owner	Partnership	Third-and-Fourth	Half-and-Half	All Operators
Total	118	42	5	262	73	500
$3750 and Over		2		1		3
3500-3749	1			1		2
3150-3499	1					1
3000-3249		2		1		3
2750-2999		1		1		2
2500-2749	4			3		7
2250-2499	1	1		6		8
2000-2249	2	2		2	1	7
1750-1999	5	1		12	1	19
1500-1749	6	2		9	4	21
1250-1499	6	2	1	16	3	28
1000-1249	6	3	1	28	9	47
750-999	13	5		42	6	66
500-749	18	6		48	17	89
250-499	21	6	1	53	28	109
0-249	14	4	1	31	4	54
— 1-250	4	4		6		14
— 251-500	5			2		7
— 501-750	4					4
— 751-1000	3		1			4
—1001-1250	2					2
—1251-1500		1				1
—1501-1750						
—1751-2000	1					1
—2001-3000	1					1

sibility of making a high income is as good as that of owner groups, but there is less chance of this group's suffering a loss. The possibilities of the half-and-half group are much more restricted. Out of 73 farms observed, none sustained actual cash losses. At the same time, however, none of them made very large incomes, and the majority of them made relatively small incomes. This group of farmers has very little, if any, capital invested in the farm operation. The owner furnishes all capital in land, permanent improvements, teams, tools, and feed for teams. The operator furnishes planting seed, labor, and pays all hired labor necessary. His income is essentially a labor income for himself and family.

One is probably surprised to find such a wide variation in income among 500 farmers grouped within such a limited area where the climatic and soil conditions are so similar. It is not always easy to account for all of the forces which have operated to cause this variation. Some of these forces which we know are present are hard to measure. For example, no satisfactory method has been determined for measuring the influence of the human element, or managerial ability, on the farmer's income. But there are certain factors which may be measured quantitatively. Some of these factors we shall consider in an attempt to indicate their relation to the farmers income and the intensity of such influence.

Some Factors That Influence the Farmer's Income

No attempt is made in this connection to measure all of the factors which influence the farmer's income. The data available are not adequate. The attempt here is to show the direction of the relationship, that is, which factor influences the other and whether the effect is negative or positive. Is the influence significant, and if so, what advantage can be taken of it by the farmer?

Twenty-two relationships*, eight for owners, and seven each for the two tenant groups have been calculated from data collected in an attempt to indicate an answer to the above question. This information may be more clearly presented in the form of a diagram. It is thought that one diagram, that for owners, is sufficient since there is a striking similarity in all groups for the same factor. The only exception to this is the inconsistently high correlation of size in acres to the net income per acre among half-and-half operators. I see no apparent reason why this should be. There is a possible explanation in the small size of the number of observations.

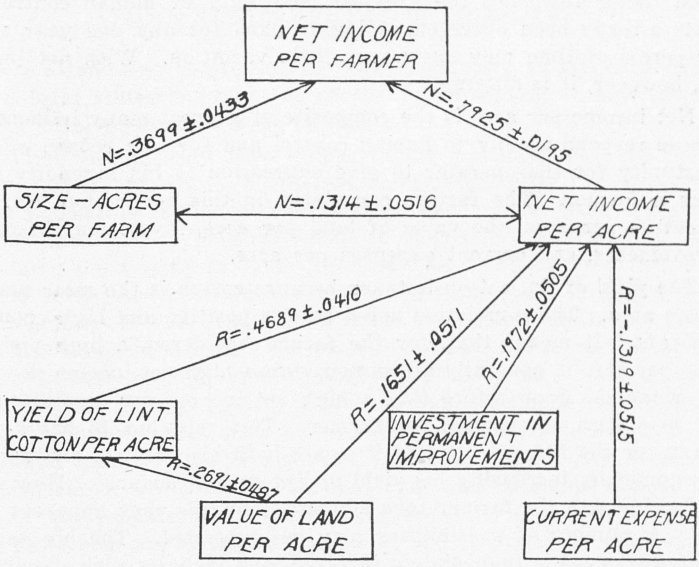
In diagram Figure 39 a triangular relationship of net income per farmer, size of farm in acres, and net income per acre is shown.

From this it will be observed that size has a positive, not high, but a significant relation to the net income of farmers interviewed. It does indicate that the chances of increasing the farm income lie in the direction of increased farm acreage, rather than reduction of acreage. And even

*Table 2A appendix.

FIGURE 39

SOME FACTORS THAT INFLUENCE THE FARMER'S NET INCOME (OWNERS)



though it be true that size represents a range of possibilities, possibilities for losing and possibilities of gaining, it remains equally true that the chances for large incomes are better with an increase in size. On this basis it would be safe to recommend an increase in size of farms in so far as managerial ability will permit.

The possibility of changing the factors discussed should be kept in mind. The element of size may be a highly fixed factor and more especially so for the owner group. Whether significant, or not, the degree of correlation is higher for the third-and-fourth* group than for the owner, and considerably higher for the half-and-half than for the third-and-fourth group. This would seem to indicate that the tenant has a better opportunity of matching his ability and equipment with a correct amount of land than does the owner. In the case of the half-and-half operator a conscious effort is made on the part of the owner to furnish him with a suitable number of acres to be associated with the teams and tools used.

A second important factor having a high relation to the net income per farmer is the net income per acre. The influence of this factor is much more intense than that of size. The question naturally arises as to the influence of size on this factor. The relationship is shown to be very small, certainly not significant. This can be interpreted to mean that size and

*See Table 2A appendix.

net income per acre are related to the net income per farmer almost entirely independently of each other. On this assumption let us inquire through which does the farmer have his greatest opportunity of influence. Which factor furnishes the greatest possibility of human control? Size, as has already been observed, is highly fixed for any one year and for a long period of time may show very little variation. With net income per acre, however, it is different.

Net income per acre is the composite of a great many influences. Most of these respond readily to human control and for this reason offer ample opportunity for the operator to give expression to his ingenuity and ability as a farmer. The factors considered in this connection are: yield of lint cotton per acre, the value of land per acre, investment in permanent improvements, and current expenses per acre.

The yield of lint cotton is taken because cotton is the main money crop for this area. The correlation noted here is positive and high enough to be significant. It means that, for the farms considered, a high yield of lint cotton per acre is generally associated with a high net income per acre and from what has gone before that a high net income per acre is closely related to a high net income per farmer. This relationship has a practical bearing for the farmer. Out of it comes both his problem and opportunity of economically increasing his yield of lint cotton per acre. How can it be done? How can the farmer take advantage of this very apparent relationship? A number of possibilities may be suggested. The big problem of soil improvement is immediately involved, and includes such possibilities as terracing, ditching, draining, fertilizing and the growing of leguminous crops, or any other practices which will build and maintain soil fertility. It is in this connection that good cultural methods find their greatest expression. The importance of selecting and developing a high yielding variety both for quality and quantity should not be neglected. For example, if a grower can by a change of variety get the same amount of lint, but a longer staple, he may thereby materially increase his net income per acre.

As stated, at the beginning of this brief discussion on net income correlations, no attempt has been made to account for all the factors involved. Aside from the factors which influence the efficient growing of crops, the net income per acre and ultimately that per farmer would be modified by the system of marketing employed. More data are necessary for measuring this factor. This brief treatment will be considered well worth while, if it conveys the idea that some factors influence the income of the farmer a great deal more than others, and not only this, but that of the factors most closely correlated some are much more subject to the farmer's control than others. A much more complete development of this idea can be attained when data based on detailed records and accounts are available.

CHAPTER X

MARKETING FARM PRODUCTS

SOME FUNDAMENTAL PRINCIPLES

Before attempting to present the local marketing situation of the area studied a brief statement of some of the fundamentals of any system of marketing farm products will be offered.

Attention has already been called to the possibility of the farmer's increasing his income through efficient marketing. This follows from the fact that marketing is the process through which farm products are converted into farm price. It is the economic mechanism through which physical products must pass in order to have them transformed into money value. The final result or value realized is conditioned very largely by the nature and quality of the product, the kind of machine used, and the efficiency with which it is run. No machine however skilfully handled, can turn out its best product from inferior raw material. Neither can the most perfect marketing system with the best management possible accomplish its best results without the most suitable product both as to quantity and quality. To furnish this is the primary function and individual problem of the grower. No less care and judgment should be exercised in the selection of a marketing machine, and especially should those types which are antiquated, clumsy, and wasteful be avoided. And finally if this machine is to function properly and do the work for which it was designed, it must be intelligently run.

It is very essential that farmers both individually and as groups understand that in order to take advantage of any economies to be realized in marketing certain services must be rendered. It costs something to render these services. It costs in time, equipment, and brains. Such investments involve risk and responsibility; in fact, the entire economic basis of marketing is involved, and those who offer to render such services should be familiar with this basis, since in it the possibilities and limitations of any improvement through marketing are fixed. These services may be thought of abstractly as the creation of certain utilities or values, such as **form, place, time,** and **possession.** In other words, a commodity must be in the desired **form,** at the proper **time** and **place,** and in the **possession** of those whose demand is keenest for it if the best possible price is to be secured. These values are created by performing certain concrete services*, such as assembling, grading and standardizing, packaging, processing, storing, transporting, financing, distributing, and risk-taking. The significant fact to be kept in mind is that these services begin with the grower and end with the ultimate consumer and must be rendered regardless of how or by whom they are done. Farmers may come together and do them for themselves and turn back to their business any profits made or sustain any losses suffered. Some one has said of the farmer that he plows in hope,

*Macklin Theodore, "Efficient Marketing for Agriculture," Chapter II.

plants in faith, harvests in prayer, and markets by accident. Whatever this means, we do know that the great majority of farmers turn over the problem of merchandising farm products pretty largely to a third group —the middleman. The responsibility, authority, and control of the farmer with regard to his product end at this point and even though he felt ever so keenly the need of improvement he is in a weak position to exert an influence so long as the job of marketing is turned over to an outside party.

Whatever the system of marketing farm products employed, the interests of two large groups are involved, the producer and consumer. It should be the aim of the marketing mechanism, within the bounds of physical and economic limitations, to create an orderly, unobstructed flow of commodities from the one group to the other. The greatest reward such a system may hope for is the margin determined by the economic and not the manipulated forced action of the law of supply and demand. The ideal aimed at is to so adjust the program of production to that of demand that excessive losses and undue fluctuations will be avoided.

The movement of products from the farm to the consumer might be thought of as forming an immense stream with many ramifications. Under the prevailing system the flow of this stream is regulated by a third party, the middleman. His services are necessary, but too often his practices are hard to justify. There is a temptation to construct a dam across some of the branches feeding this stream or even divert a portion of the main stream, producing a temporary scarcity and creating an artificial demand. The best interests and greatest welfare of both producer and consumer require that the channel be kept open and that the flow of this stream be kept steady, feeding the market, neither starving nor flooding it.

False and impossible hopes are too often held out to the farmer from various sources. Quite often the office seeker is extravagant in his promises when soliciting the farmer's support; likewise some of our farmers' organizations have been anything but pessimistic in their effort to induce the farmer to sign on the dotted line. It is not unusual to hear a speaker proclaim that the farmer is entitled to the cost of production plus a reasonable profit. To make an income sufficiently large to cover all costs of production and have a reasonable profit left is a laudable ambition for any farmer, but it is ridiculous to attempt to fix or force a price which will do this for all farmers. Such a philosophy is monopolistic and economically unsound. Instead of bringing the farmer nearer the real solution of his problems it gets him farther away. The more hopeful and possible attitude is that the farmer is entitled to any price he wins through his superior organization both for the growing and merchandising of his product. In this connection it is very much worth his while to know his production costs in so far as he is able to calculate them. Such knowledge should serve him not as a basis for price fixing, but as a basis for more efficient production. At this point it is well to remember that all production is called into existence through the demand of the consumer expressed in price. No amount of economy and effi-

ciency in either growing or marketing, or both, will guarantee a profit to the farmer if this demand is badly overestimated. It is still worse when favorable natural conditions combine to aggravate the situation by giving a bumper crop. No successful scheme has thus far been perfected whereby the depressing influence on price of a surplus product can be avoided. Nor has there been any way discovered whereby the consumer can be made to take and pay for more of a thing than he wants at a given price. Such a device would be a panacea for all of our economic ills.

Cotton is the chief source of income for the farmers not only of Rockwall County, but of the entire blackland belt. The extent to which this is true is indicated by the survey, in which it is revealed that almost 90 per cent of the total gross receipts are from the sale of cotton and cotton seed. This means that marketing for these farmers is limited very largely to that of cotton. Poultry and dairy products, and especially poultry, are sufficiently large to require special attention.

This means that the problem of marketing in this region is more simple than in those areas of general farming where a considerable variety of products is put on the market. Cotton is a product for which there is a world-wide demand and market. It is classified as non-perihsable and does not require any very technical processing before entering the main channels of commerce. The grades are very well fixed and standardized. It is not subject to extreme or very wide local fluctuations in price. The more recent trend has been to make its handling more direct and at the same time to standardize the practices. These facts evidently help to explain the reluctance on the part of cotton growers to unite in a cooperative effort for improving their marketing situation. The absolute necessity has not and does not exist in this crop as it does in the case of those which are more perishable, more limited both as to time and place. This does not argue, however, that in the marketing of cotton the farmer's opportunity for improvement is small. There is ample room for improvement provided farmers as a group are willing to pay the price and take the risk and responsibility.

LOCAL COTTON MARKETING SITUATION FOR ROCKWALL COUNTY

In this survey an attempt was made to secure data as to where, how, to whom, and when cotton was sold; also the nature, volume, and costs of the concrete services rendered by the farmer in preparing his cotton for the local market. Among these services have been included such items as picking, hauling to the gin, ginning, hauling to the market, weighing and yardage, and insurance. In addition to these inquiries growers were asked to offer suggestions as to improvements which they thought might and should be made in the marketing of cotton.

It is thought worth while to give the findings in considerable detail since the conditions and practices of this area are taken as representative and typical of the blackland belt, and in some particulars of a much wider range.

Where Cotton is Sold Locally

The answer to the question as to where farmers sell their cotton is very well indicated by the accompanying Table 43. It will be seen at once that the great majority sell on the street. The term might be misleading to those not familiar with the practice which it is designed to cover. There was a time when it was the common practice for the grower to drive his bale of cotton from the gin on to the street where local buyers took samples and made bids for the cotton. This custom still prevails to a limited extent at some local points. Selling on the street as here used refers to the general practice of growers in this section who haul their cotton to the yard, have it weighed, secure a sample, and carry this sample to the local buyer or buyers whether it be on the street or in an office. A few farmers sold at the gin. In such cases it was often purchased by the ginner. The absence of warehouses or rather the failure to use them is clearly shown.

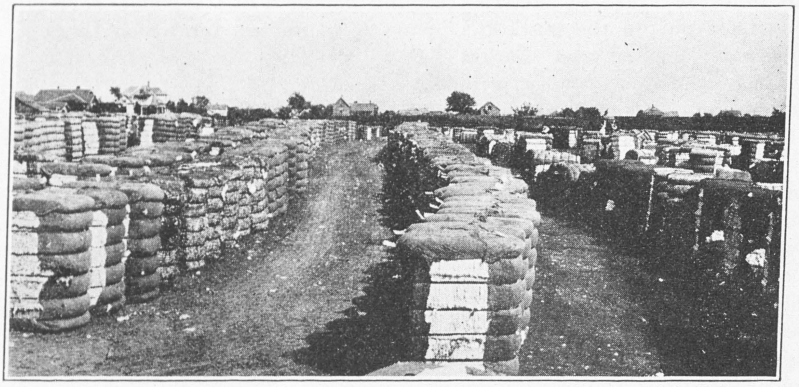


Figure 40. Local cotton yard.

TABLE 43

Where Cotton is Sold by Farmers

Place	Number Selling
Total	496
Gin	41
Street	438
Warehouse	2
Street and Gin	14
Street and Warehouse	1

Basis on Which Cotton is Sold

The attempt here is made to find out on what basis the farmer makes his sales. Do the majority of them sell on the basis of merit as expressed by the grade and staple of their cotton or for a flat price offered by the local buyer. As a result of this inquiry it was found that 461 used samples, 224 had their cotton graded, and in the case of 94 the staple was taken into consideration. The growers who belonged to the Farm Labor Union had their cotton graded by their local grader-salesman. A great many, in fact the big majority of growers, confess that they do not know how to class and staple their cotton. It is easy to see that the seller is at a decided disadvantage if he does not know the grade and price of the product he is offering for sale.

TABLE 44

Basis on Which Farmers Sell Cotton

How Sold	Number of Answers
Total	435
Sample	244
Grade	12
Sample, Staple	22
Sample, Grade	140
Grade, Staple	17

To Whom Sold

All of the farmers visited with the exception of one sold either through private local buyer or a local cooperative agency. Out of 497 reporting, 400 sold exclusively through local buyers, 63 sold to local buyers and through their local cooperative agency, and 34 sold through the cooperative alone. Rockwall County is hardly typical in this respect. It is known

TABLE 45

To Whom Farmers Sell Their Cotton

Sold to	Number of Farmers
Total	497
Local Buyer Exclusively	400
Local Buyer and Cooperative	63
Cooperative Association Only	34

that a number of counties in the blackland belt market a considerable amount of their cotton through the Texas Farm Bureau Cotton Association, which is a highly centralized cooperative organization.

When Farmers Sell Their Cotton

It is very generally known that under the prevailing method of marketing the farmer sells his cotton along as ginned. Very little if any concerted effort is made to distribute sales throughout the year. Quite frequently the obligations of the grower are such as to demand an early sale of his cotton. Table 46 given here shows the numbers out of 408 selling during the different months from August to March. And even though cotton began to move into the market as early as August and continued as late as March, by far the larger bulk of it moved during the months of September, October, and November. A summary of these answers shows that six farmers sold during one month, 75 over a period of two months, 266 three months, 56 four months, and 5 over a period of five months.

TABLE 46

When Farmers Sell Their Cotton

Month	Number Marketing
August	35
September	295
October	302
November	226
December	52
January	14
February	0
March	1

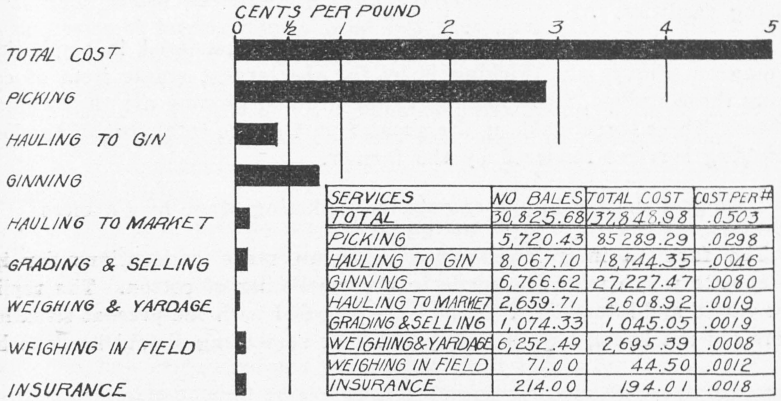
Nature and Cost of Marketing Services Rendered Locally by the Grower

There are a number of services rendered by the grower in preparing his cotton for the market. Such services are rendered almost exclusively by the grower whether he sells in the local or a more distant market. They are: picking, weighing in the field, hauling to gin, ginning, hauling to market, weighing and yardage, grading and selling, and insuring. Such services as picking, weighing in the field, and hauling to the gin have been included since they are more closely associated with marketing than with the growing of the crop.

From diagram Figure 41 and accompanying data, definite information is given as to the volume of service for each item, the total cost, cost for each service, and the cost per pound for each service. In the case of picking, only that cotton which the farmer hired picked was considered.

FIGURE 41

COST OF LOCAL MARKETING SERVICES COMPARED

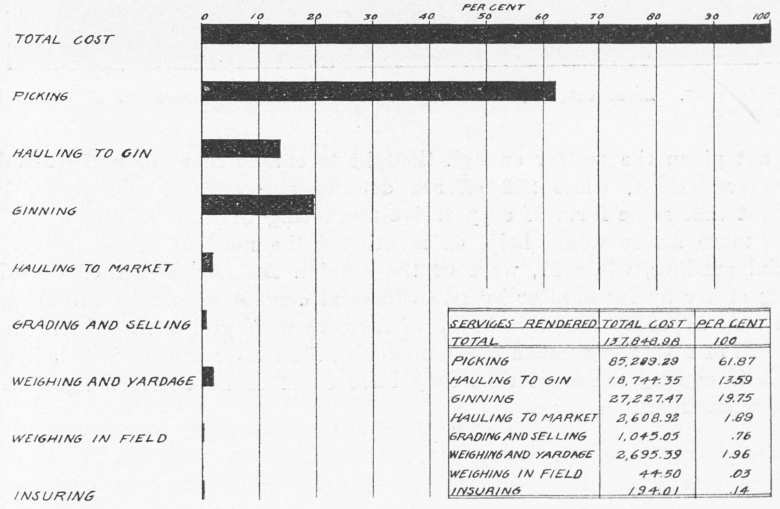


SERVICES	NO BALES	TOTAL COST	COST PER #
TOTAL	30,825.68	137,848.98	.0503
PICKING	5,720.43	85 289.29	.0298
HAULING TO GIN	8,067.10	18,744.35	.0046
GINNING	6,766.62	27,227.47	.0080
HAULING TO MARKET	2,659.71	2,608.92	.0019
GRADING & SELLING	1,074.33	1,045.05	.0019
WEIGHING & YARDAGE	6,252.49	2,695.39	.0008
WEIGHING IN FIELD	71.00	44.50	.0012
INSURANCE	214.00	194.01	.0018

All of the cotton grown was considered in hauling to the gin, while in ginning only that paid for by the grower was taken into account. A relatively small amount of the cotton had grading and selling charges. This item is accounted for by the members of the Farm Labor Union, who paid a flat rate per bale for the services of their local grader-salesman. Very little cotton had a separate charge for weighing in the field and very few farmers insured their cotton. As has already been pointed out the greater

FIGURE 42

COST OF SERVICES RENDERED IN PREPARING COTTON FOR THE MARKET



SERVICES RENDERED	TOTAL COST	PER CENT
TOTAL	137,848.98	100
PICKING	85,289.29	61.87
HAULING TO GIN	18,744.35	13.59
GINNING	27,227.47	19.75
HAULING TO MARKET	2,608.92	1.89
GRADING AND SELLING	1,045.05	.76
WEIGHING AND YARDAGE	2,695.39	1.96
WEIGHING IN FIELD	44.50	.03
INSURING	194.01	.14

part of the cotton was sold along as ginned and since the farmer is not holding the cotton there would be no need of his going to the expense of insuring. Insurance would come high because of the lack of adequate warehousing facilities.

A comparative cost of the different services rendered is emphasized by diagram Figure 42. Picking is by far the largest single item of cost among those studied, while hauling to the gin and ginning are the two next highest. These three make up the greater part of the total cost of the local marketing services rendered by the farmer.

Suggestions for Improvements in Marketing Made by Farmers

The farmers interviewed were asked to make suggestions for improvements which might be made in the marketing of cotton. The replies were varied and interesting. Some were satisfied with the present situation, others did not know, a great many felt that something should be done but

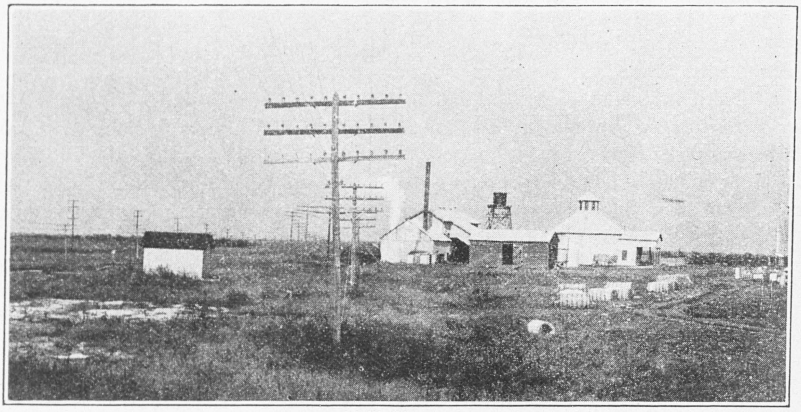


Figure 43. Local cotton gin an important step in the preparation of cotton for the market.

had not given the matter enough thought to enable them to make definite recommendations, while 222 offered definite suggestions. Of these, 169 thought that some form of cooperative marketing whereby selling would be made more direct would help, 42 mentioned the need of some system of official grading, while 11, were of the opinion that some method of price fixing either by farmers or by governmental control should be established. It is very apparent that this group of farmers were giving thought to their problem of marketing, much more, no doubt, than their suggestions indicate, but it is equally apparent that they have come to no common agreement as to what should be done.

COOPERATIVE MARKETING OF COTTON

This chapter would be incomplete without some word on cooperative marketing. Much has already been said on this subject and the writer has no desire to merely add to what has been said. He feels that a great deal must still be said and much more done before the real spirit and philosophy of cooperative marketing is understood and accepted universally among farmers. It should not depend on propaganda methods of organizing; in fact, it cannot exist for a very long while on such methods. There should be good sound economic reasons as the basis for all cooperative marketing activities.

In a system of private marketing as has been described for this area, the farmer relies, must necessarily rely upon the other person. He himself is not in, and a part of the system; therefore, he is in no position, even though he has the desire, to improve his marketing conditions. He has no responsibility, no authority, no control—hence is practically helpless. The question is, how can he become responsible, gain authority, and assume control in the merchandising of the product which he has grown. Successful cooperative marketing should furnish this opportunity. Through it the farmer becomes responsible individually and as a group. Through it he gains authority and assumes control. He becomes responsible for doing his own business and knows where to place the blame when not satisfied with the results obtained. Along with this responsibility, authority, and control is the obligation to perform the services undertaken as well or better than if done by some other group.

In order to get into the game and do marketing, the farmer must get into possession of the machinery of marketing. And not only this,—he must know how to run the machine once it is in his possession. This involves the need of capital, intelligence, experience, training, and information. A cooperative marketing system, however perfect, can serve the farmer only in so far as he is able to use it. If not intelligently managed it may become a liability instead of an asset.

Benefits of Cooperative Marketing

At best what can cooperative marketing accomplish for a group of farmers? Too often it has been advocated as a panacea for all the farmer's ills, as the only way out of the woods. The farmer who becomes a member of a cooperative marketing association with this idea in mind is likely to be disappointed and become dissatisfied. For this reason it is very essential that he have pretty definitely in mind the benefits which may be expected from a successful cooperative marketing association.

The benefits of successful cooperative marketing in cotton may be grouped under two main heads: (a) immediate, or tangible, and (b) ultimate or less tangible benefits. These groups may be best illustrated by a brief statement of the benefits included under each.

First of all, it is very apparent that **cooperatively owned and operated associations give profits, if there be any, to those who own and operate**

them. It is well to observe, however, that profits are not always what the public thinks them to be. It is not unusual for the grower to note the wide difference between the price he receives for his product and that paid by the consumer and hastily conclude that through cooperative effort this wide margin, or much of it, can be turned back to him as profit in the form of an increased price for his product. This may be a confusion of gross and net profits. In this the grower needs to know the nature and the cost of the services which must be met in the marketing of his crop whether done by private or cooperative agencies. It means that his outlook and vision need to be broadened on the complete movement of products from the grower to the consumer.

A second immediate benefit of successful cooperative marketing is a **reduction of marketing costs.** These costs may be reduced by increasing the volume of business, by making marketing mechanism more efficient in the services which it renders, or by both.

A third and very apparent benefit is that which comes through an **improvement of services.** Specifically these are realized through the development and standardization of grades, selling on the merit of the proudct, elimination of the speculative motive, by risk spreading, etc.

Some of the ultimate or tangible benefits incident to successful cooperative marketing may be enumerated as the **readjustment of production, creating confidence in the marketing system, finding and developing leaders, and enlarging the conception of agriculture.** Briefly, a readjustment of production is an organized recognition of marketing conditions and an attempt to direct production accordingly. Confidence in the marketing system is evidenced by a belief in it and a strong conviction that the prices secured by it are the best possible under the conditions. It appreciates the fact that what is put into the marketing machine determines very largely what is to be gotten out of it. Leadership is found and developed through team work, through a democratic policy which is positive and constructive in content. Successful cooperative marketing enlarges the conception and expands the field of agriculture for the farmer. Farming to him is no longer the mere growing of products but includes also the merchandising of these products. It gives greater challenge to his ingenuity and ability by increasing his responsibility, authority, and control in the industry.

Risk Spreading

Risk-spreading is a feature in cooperative marketing which should be better understood. The opportunity will be taken here to illustrate the advantages of **risk-spreading** in the marketing of cotton. The term may be roughly defined as a process of averaging and pooling. It raises the specific question, would the farmer's chances of getting a higher price for his cotton be increased if sold throughout the year instead of during two or three months? Would it be better for the grower if a part of his cotton went onto the market 300 days out of the year instead of all of it going onto the market during a very limited number of days? By way of illus-

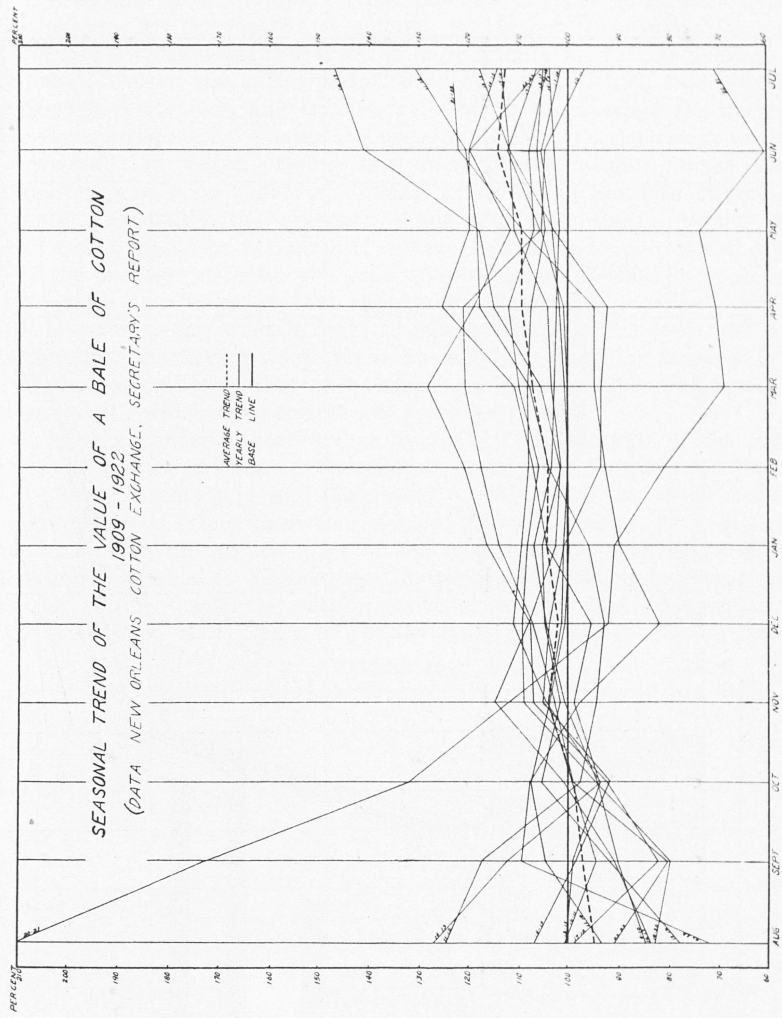


FIGURE 44

tration the monthly value of a bale of cotton, upland middling, has been compared with its yearly average for the period from 1909 to 1922 inclusive. This comparison is graphically portrayed in Figure 44. In this the heavy solid line at 100 is the average for the year whatever it happens to be. The lighter solid lines show the relation of the value for each month to the average for that year. The heavy dotted line indicates the trend for the entire period when an average of the monthly percentages is considered. The year 1920 was left out of this average since it may easily be considered as abnormal and for this reason would exert an undue influence on the trend for the entire period.

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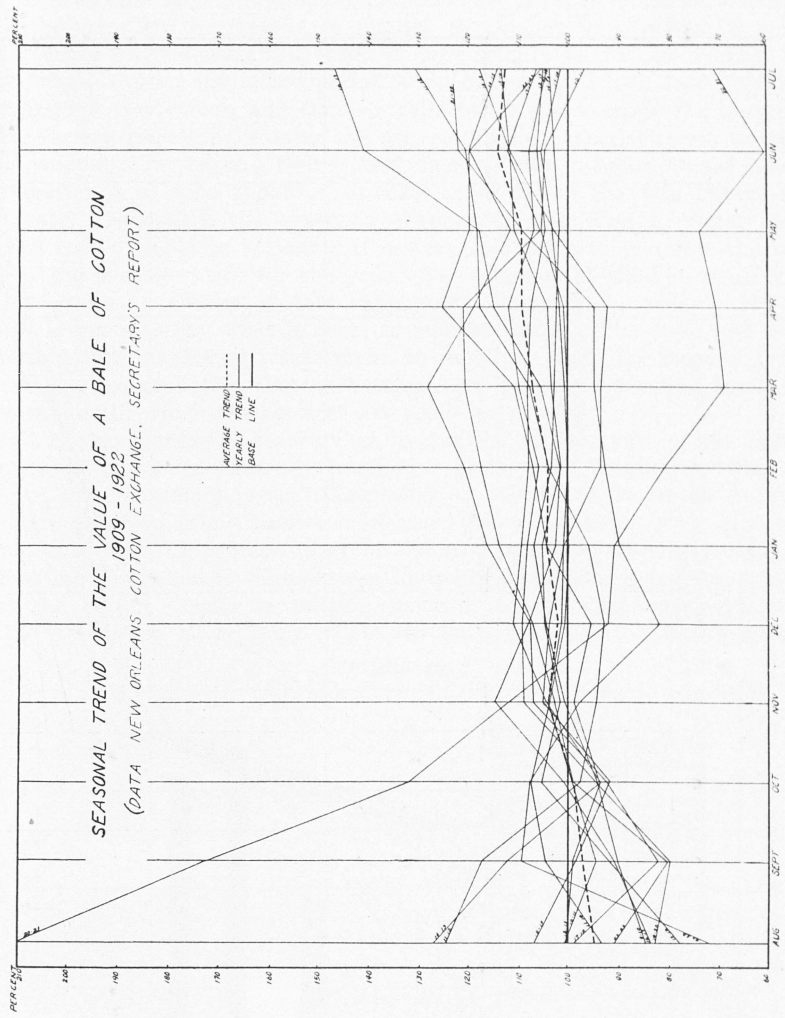

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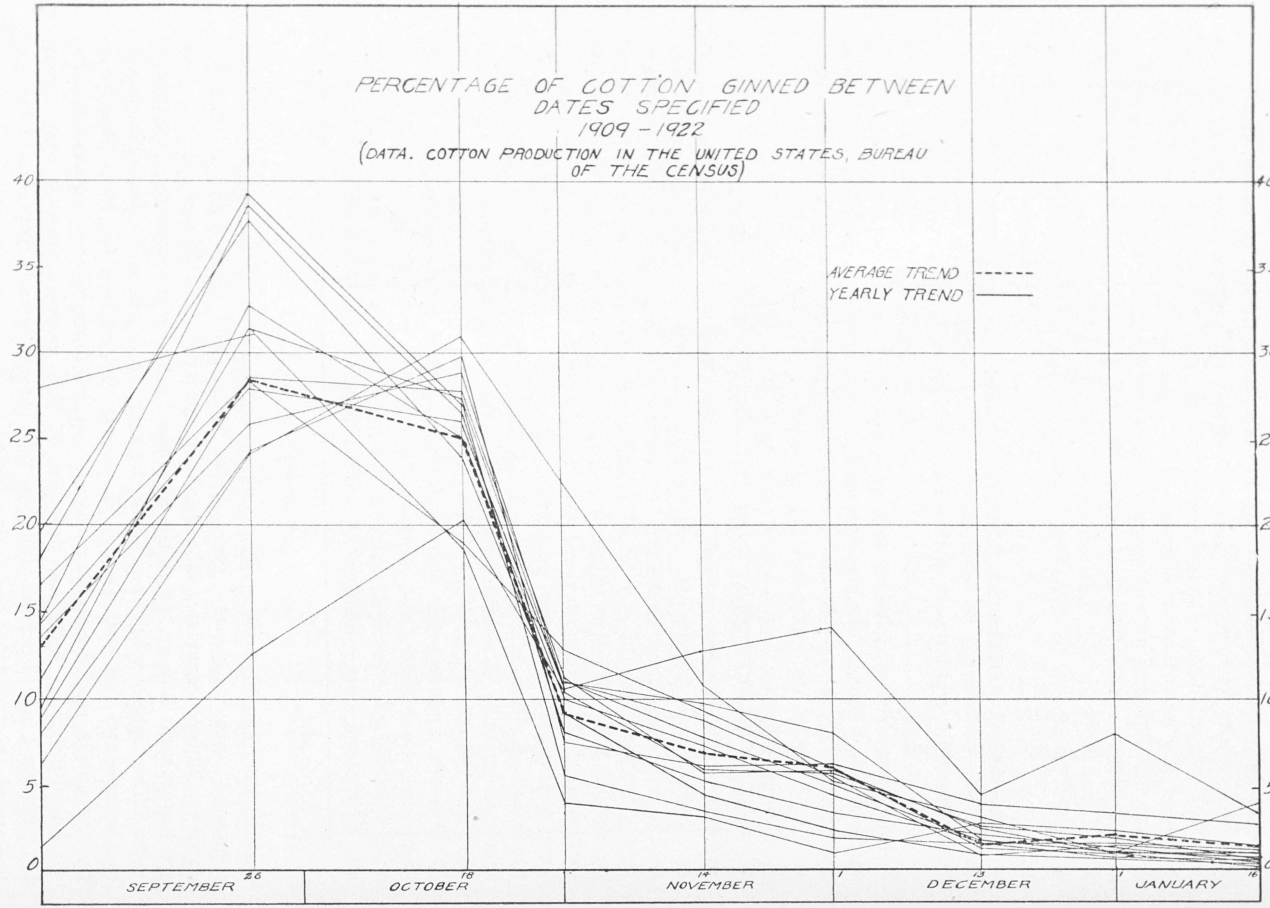
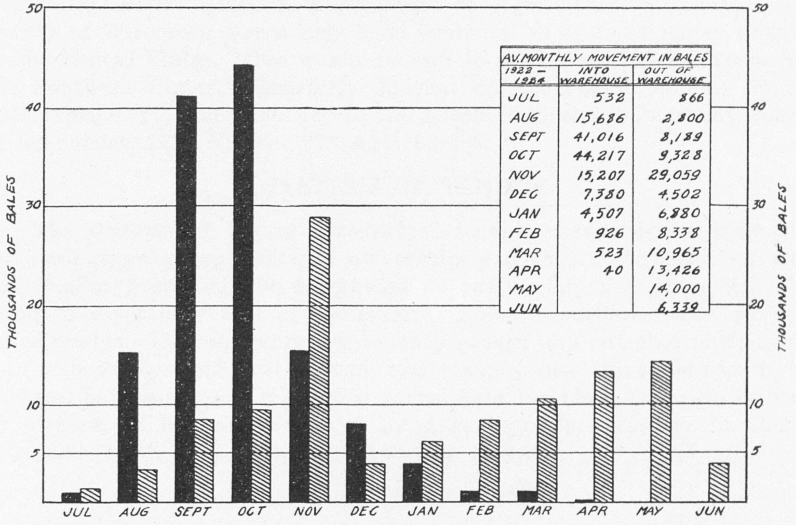
FIGURE 45


PERCENTAGE OF COTTON GINNED BETWEEN DATES SPECIFIED
1909 - 1922
(DATA. COTTON PRODUCTION IN THE UNITED STATES, BUREAU OF THE CENSUS)
AVERAGE TREND
YEARLY TREND
40
35
30
25
20
15
10
5
0
SEPTEMBER 26
OCTOBER 18
NOVEMBER 14
1
DECEMBER 13
1
JANUARY 16

It is at once apparent that for the majority of years in the period taken that the price for the months of August, September, and October is below the average for the year; this trend is more readily seen if the average for each month during the entire period is considerd. In which case the price for August, September, and October falls below the average for the year, while for the remaining months the price is higher than the yearly average and gradually increases. Going back then to the question raised above, the answer is at once apparent, at least in so far as the data offered are adequate. Evidently the grower's chance for obtaining a better price for his cotton would be increased if it were sold so as to give him the benefit of the average price for the year. The question of what it would cost him to take advantage of this opportunity immediately arises. No attempt is made to say what it costs to market cotton. The costs and margins in cotton marketing would make an excellent study for research. We know in a general way that such costs vary greatly depending upon the efficiency with which the services are rendered.

It is very generally known that by far the greater part of the cotton crop is put on the market by the grower along as it is ginned. The nature of this movement is well illustrated by Figure 45, in which the percentage of cotton ginned between specified dates is given. At a glance it is observed that the greater part of the crop, not less than four-fifths, is ginned by November 1. Comparing this with Figure 44, it is very evident that the cotton farmer is putting most of his product on the market at the time when he is likely to get the least price for it. Under such a

FIGURE 46



AVERAGE MONTHLY MOVEMENT OF COTTON INTO AND OUT OF WAREHOUSE HANDLED BY THE TEXAS FARM BUREAU COTTON ASSOCIATION 1922 – 1924

(Solid bar = movement into warehouse)
(Cross hatch = movement out of warehouse)

system his bargaining power must necessarily be weak and his opportunity for merchandising practically nil.

It is felt that this weakness may be remedied through sound cooperative effort. The result of the policy pursued by the Texas Farm Bureau Cotton Association for the seasons 1922-23 and 1923-24 is a good example of a cooperative marketing association which is spreading the risk over the entire year and attempting to give the grower the benefit of the average price for the year instead of that received under the prevailing method where sold over a relatively short period of time. This is concretely illustrated by Figure 46, which compares the average monthly movement of cotton into and out of the warehouse. From this the peak of receipts is very much in evidence and in sharp contrast with it is the more regular and extended movement of cotton out of the warehouse as indicated by actual bales sold. It is not argued, however, that a fixed amount of cotton should be sold each month in an effort to spread the risk. The amount offered should necessarily be governed by the facts of supply and demand, and economic conditions in general.

CHAPTER XI

LAND TENURE

The question of land tenure becomes more and more vital as our population increases and good farm land becomes more scarce and higher-priced. Year by year it becomes increasingly difficult for one to climb the ladder of tenancy to ownership. This means that the problems of land tenure are intensified and present a greater demand for an impartial, accurate, and careful analysis and intrepretation. Unfortunately this is a subject which lends itself admirably to the use of generalities unhampered by facts, and too often conclusions reached are highly colored by sentimental bias. The brief treatment offered here hopes to avoid such elements of weakness in so far as is possible. It seeks to know what the situation is, how it came to be, and what, if anything, may be done about it. This inquiry is not concerned with the general aspects of land tenure, but deals more particularly with the economic aspects as related to the blackland belt of Texas, and specially with the facts as exhibited by the 500 farm schedules taken in Rockwall County. Those who wish to become better informed on the broader aspects of the subject and especially on that of farm tenancy will find that much has already been written.

Dr. W. B. Bizzell in his "Farm Tenantry in the United States"* has given an able treatment of the subject. His is a study of the historical development of farm tenancy and its economic and social consequences on rural welfare with special emphasis on conditions in the South and Southwest. Dr. B. H. Hibbard, Department of Agricultural Economics, University of Wisconsin, has a very keen appreciation of the tenancy situation in the United States. One would do well to read his articles, "Tenancy in the Southern States," Quarterly Journal of Economics, Volume 76, No. 70-9, April 1917, and "Tenancy in the Southern States," Quarterly Journal of Economics, 1913, Volume 27, page 482-496.

SYSTEMS OF TENURE

The systems of tenure encountered in this survey divide themselves into two large groups, that of ownership, and that of tenancy. A third, but smaller group will be designated as partnership arrangements. This group is essentially that of ownership. For the purposes of a more detailed analysis the ownership and tenancy groups will be subdivided; ownership into owners and part-owners, and tenancy into third-and-fourth, and half-and-half tenants. Of the 500 farms here included, 118 were operated by owners, 42 by part-owners, 5 by a partnership arrangement, 262 by third-and-fourth, and 73 by half-and-half tenants.

Systems of Tenure Defined

Before taking up the more specific terms employed in the survey it is

*Dr. W. B. Bizzell, "Farm Tenantry in the United States," Bulletin No. 278, Texas Agricultural Experiment Station, College Station, Texas.

thought well to have in mind a working definition at least of such general terms as land tenure, tenancy, and tenantry. No fine distinctions will be drawn.

Land tenure will be defined as the system by which land is occupied and operated.

Tenancy is the system by which land is occupied and operated by persons other than the owners. It is commonly known as a system of renting, and refers here to the renting of land for agricultural purposes.

Tenantry refers to the people in a system of tenancy, the tenant.

The specific terms used are, and will be defined as follows:

The **owner** system of land tenure is that in which the farm is owned and operated by the owner.

The **part-owner** is a system wherein the owner rents and operates as a unit additional land to that owned.

Partnership is a system in which the operator furnishes his own labor and management and one-half of the work animals, productive livestock, tools, feed, and extra labor. All products grown are shared equally.

The **third-and-fourth** is a system in which all of the land operated is rented on the share basis of one-third of the grain and one-fourth of the cotton grown. In this system the owner of the land furnishes the land and permanent improvements, while the operator furnishes the teams, tools, labor, and most of the supervision. There exists in practice slight modifications of this system. For example, a tenant who plants a few acres in sudan or sorghum for hay often pays a cash rent per acre instead of a share of the crop. This is quite common in the case of absentee owners. In a few cases a cash rent is paid for pasture land, especially when there are several acres of pasture in the farm.

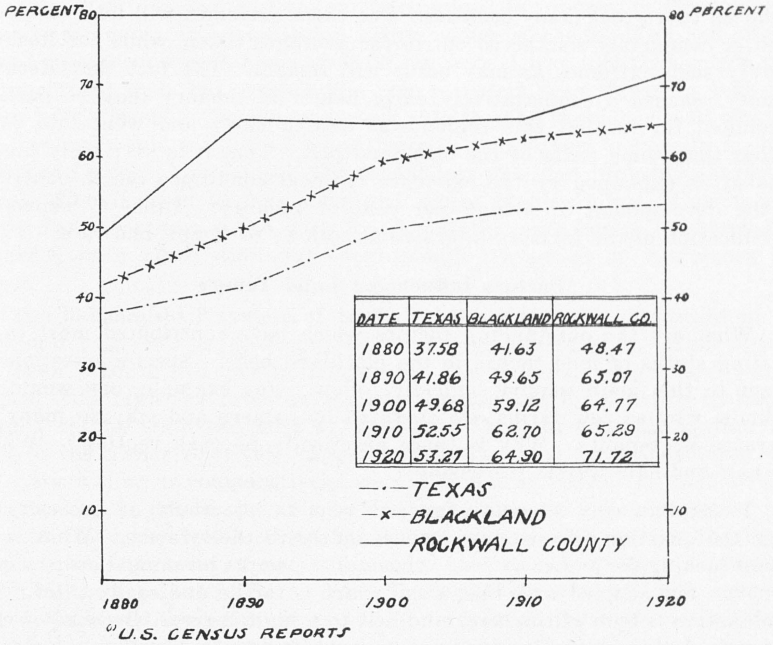
The **half-and-half system** is that in which the operator rents both land and equipment. The land, teams, feed for the teams, and tools are furnished against the labor and such managerial ability as the tenant may possess. As a rule the products grown are shared equally. Here as in the third-and-fourth system slight modifications exist in practice. In a few cases the owner received all of the cotton seed and one-half of the lint cotton. Greater restrictions as to livestock kept and crops grown is exercised by the owner. This group of tenants is recognized by the U. S. Census as **croppers**, defined as share tenants who do not furnish their work animals. Such a consideration does not distinguish between half-and-half tenants who operated independently and those who share the crop from a few acres of cotton and receive cash wages for the major part of their labor and the labor of their family. It is felt that such a distinction is necessary and important especially for this area where the half-and-half system forms a distinct and significant group and seems to be increasing.

Historical Trend of Tenancy

Figure 47, in which the relative trend of tenancy is shown for Texas, the blackland belt, and Rockwall County for a period of 40 years reveals some very interesting features. It will be readily observed that the per

FIGURE 47

TREND OF TENANCY IN TEXAS, THE BLACKLAND BELT, AND ROCKWALL COUNTY, 1880 - 1920[1]



DATE	TEXAS	BLACKLAND	ROCKWALL CO.
1880	37.58	41.63	48.47
1890	41.86	49.65	65.07
1900	49.68	59.12	64.77
1910	52.55	62.70	65.29
1920	53.27	64.90	71.72

[1] U.S. CENSUS REPORTS

cent of tenancy is high for all three areas when compared with the country as a whole. The blackland belt is uniformly and to a gradually increasing degree higher than the State while Rockwall County is higher than either

TABLE 47
Classification of Farm Operators as to Tenure and Race

Classes	White Operator	Negro Operator	Total
Total	475	25	500
Owners	117	1	118
Part Owner	41	1	42
Partnership	5	0	5
Third and Fourth.	256	6	262
Half and Half....	56	17	73

the State, or the blackland belt, of which it is a part. Furthermore, attention should be called to the fact that there has been an increase in tenancy for all three areas. This increase with the exception of Rockwall County seems to have taken place more or less gradually. This difference, such as it is, is probably pretty largely accounted for by the fact that Rockwall County is but a single unit while both Texas and the blackland belt are made up of a great many counties. For them extremes will tend to be subdued or completely smothered out in the averages taken, while for Rockwall County such extremes as may occur will remain. The fact that Rockwall County reached a comparatively early height in tenancy may be partially accounted for in that this region was settled early and went into farms earlier than some parts of the blackland belt. That it is extremely high in tenancy is explained by the existence of ideal conditions which contribute to the development of a high per cent of tenancy. Table 47 shows the classification of the farmers interviewed both as to tenure and race.

Factors Influencing Land Tenure

What are the outstanding factors which have contributed most to the existing status of land tenure in the blackland belt? Specific questions incident to this main inquiry logically follow. For example, one would like to know why so few farms are operated by owners and why so many are operated by tenants. Why is there practically no cash renting? Why is the half-and-half system increasing?

To explain why so many farmers rent farms would of necessity answer the question why so few owners cultivate their farms. What is the tenant looking for? Let us see. Above all he wants an annual crop, a quick turnover, and coupled with this, a soil which is fertile and easily tilled. This combination is true of the blackland belt to a high degree. Because of these desirable features this land is high in value, which in itself is an element contributing to an increase in tenancy. It simply means, as has already been pointed out, that the tenant with limited means finds it decidedly to his advantage to put all of his capital into operating equipment instead of investing a part of it in land which yields a relatively low rate of return. It enables him to associate with himself and equipment a much larger unit of land than he would otherwise be able to purchase.

It is not uncommon to hear the statement that a farm is rented because it will support two families. This claim would be difficult to prove. It would probably be more true to say that the owner is unable or finds it more difficult to rent the poor farm. The fact that a farm yields a return sufficient to support two families may make it easier for the owner to rent it, but it does not by any means follow that farms rent for this reason. There are a great many fruit farms, dairy and other livestock farms together with ranches which would support two families, but they are rented to a very limited extent. On the other hand there are a great many farms which by no means would support two families, yet, they are rented year after year. It is in the nature of the soil, the kind of farming, the char-

acter of the people, and the value of the land that a cause of tenancy will have to be sought, more particularly the type of agriculture.

Cash rent with rare exceptions is not to be found in the blackland belt. None of the 335 tenants visited in Rockwall County paid cash rent. This condition is very largely accounted for by the fact that the hazards in a one-crop system are rather great and particularly so for cotton. Failures are not altogether unknown and violent fluctuations in production from year to year are common. In conversation with a renter whose landlord had offered to rent to him on a cash basis of $5.00 per acre, I was told that cotton was too uncertain and that he felt the share system was fairer to both the owner and himself. The tenant is less able to take the added risk which a cash system would involve. This attitude is shared very generally by both tenant and owner. Not only is the tenant less able, but probably characteristically less inclined to take risks and accept responsibility. Custom evidently has something to do with it. A practice once begun is changed or discarded with much difficulty even though its period of usefulness has passed

The half-and-half system of tenancy has come to be significant in the blackland belt, and is generally believed to be increasing. This system has been inaugurated pretty largely by the owners. High land values coupled with high tax rates have made it necessary for them to realize as large a return from the land as possible. The half-and-half system will yield to the owner relatively larger returns than the third-and-fourth system. By adding a comparatively small amount of capital to that already furnished he is practically able to double his income. For example, if a farm of 100 acres worth about $15,000 is being rented on the third-and-fourth basis, with most of the land planted to cotton, the return amounts to essentially a one-fourth share. Now by furnishing about $1,000 more for teams, tools, and feed, the owner is able to rent on the half-and-half basis and receive one-half of the crops grown. It should be observed, however, that in addition to his extra investment and current expenses he is taking more risk and in most cases giving closer personal supervision. Nevertheless, by so doing he doubles his income with only a slight increase in his total investment.

It is not known whether the tenants in this group came from the general class of farm laborers, the third-and-fourth, or from some group entirely outside of farming. The chances are good that all of these sources contribute, but it is safe to say that the greater number come from the group of farm laborers. At this juncture, however, it would not be improper to speculate as to the resulting effects should this system increase to the extent of becoming the prevailing type of tenure in the blackland belt. Assuming that there would be no very great increase in tenancy in general it would then mean fewer opportunities for men to rent on the third-and-fourth basis. The income of the tenant would decrease and would make the tenant less able to accumulate funds with which to purchase land and become an owner. Again, if this system should become so general that rents would be materially increased, then the price of land would,

for this reason, ultimately increase. With the income diminished and the price of land increased the possibilities of the tenant's becoming an owner have been greatly limited.

Economic Aspects of Tenancy

In an analysis of the economic aspects of tenancy a point of primary interest is the relation of tenancy to ownership. Out of 158 answers from owner-operators as to the method of acquiring land it was found that 130 purchased their farms outright, 7 inherited them, and 21 partly purchased and partly inherited them. A similar inquiry for all farms would undoubtedly have revealed a much greater per cent of farms to have been inherited. But the fact is, and likely will remain, that the greater per cent of owner-operated farms are acquired by purchase. If the 500 farms here considered be grouped into two main groups, owners and tenants, then 67 per cent will be found to have been operated by tenants and 33 per cent by owners. Putting the two truths together one sees that a large majority of owner-operated farms are purchased outright, while at the same time over two-thirds of all farms are operated by tenants. If an increase in owner-operated farms is a goal much sought for and desired, the question naturally arises as to the opportunity tenancy offers to those of its numbers to become owners.

Here again we go to the survey. Of 165 owners, 119 passed through some form of tenancy. The average time spent as a tenant was 10 years. The greatest number made the change between the years 30 and 34. From this point fewer and fewer passed from the tenant to the owner group, illustrating a fact very generally recognized that as age increases it becomes increasingly more difficult for the tenant to become an owner. At the age of 50 years this door to ownership is practically closed. A distribution of all tenants shows that 210 out of 335, or 62 per cent, are above the age of 34 years, while 71, or 21 percent, are above 50 years of age. Assuming that it is equally easy or difficult for these 335 tenants to become owners as for the 119 just mentioned, then 21 out of every 100 has practically no chance of becoming owners. This assumption, however, is undoubtedly too liberal, for as the price of land advances it will become more difficult for the tenant to become an owner and the per cent of all tenants who may be expected to remain tenants is likely to increase.

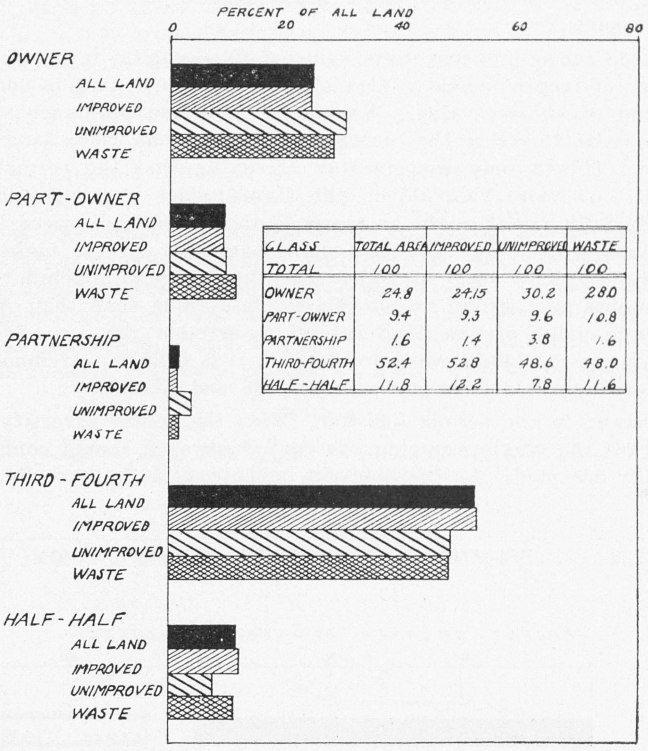
Relation of Tenancy to Agricultural Production

In the relation of tenancy to agricultural production a number of specific questions arise. For example, is the tenant getting on the best land? Does he diversify or tend more to a single-crop system? How does he compare with other tenure groups in efficiency of yield per acre, and in yield per man? These will be taken up briefly in the order asked.

Figure 48, in which is shown the relative distribution of land classes by tenure, a considerable amount, to be exact, 64.2 per cent of all land, is shown to be operated by tenants. From the diagram it will be seen that in both groups of tenants the amount of unimproved lands as well as

FIGURE 48

RELATIVE DISTRIBUTION OF LAND CLASSES BY TENURE



CLASS	TOTAL AREA	IMPROVED	UNIMPROVED	WASTE
TOTAL	100	100	100	100
OWNER	24.8	24.15	30.2	28.0
PART-OWNER	9.4	9.3	9.6	10.8
PARTNERSHIP	1.6	1.4	3.8	1.6
THIRD-FOURTH	52.4	52.8	48.6	48.0
HALF-HALF	11.8	12.2	7.8	11.6

that of waste lands is relatively lower than in the corresponding classes for all owner-groups. This would seem to indicate that the tenant is getting on those farms which have the greatest relative amount of land

TABLE 48

Average Value of Fixed Capital Invested per Acre by Tenure

Tenure	Land and Permanent Improvements	Land
Average	$133.13	$113.52
Owner	146.72	118.60
Part-Owner	143.54	122.09
Partnership	159.89	116.23
Third and Fourth..	127.63	111.88
Half and half.....	116.88	102.93

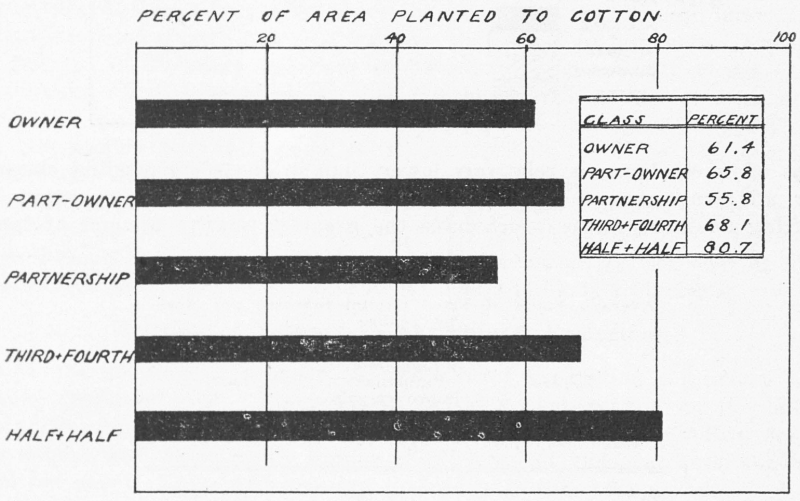
available for cultivation. The less waste and unimproved land on the farm the more readily it will rent. A farm which is broken and rough, cut up by gullies, or infested with Johnson grass is hard to rent even to a poor grade of tenant.

Table 48 showing the average value of fixed capital invested per acre by systems of tenure indicates very clearly that the tenant is not getting on the land of highest value. When both land and permanent improvements are taken together the contrast is greater than when land alone is considered. This is only another way of saying that the permanent improvements are more valuable on the farms which are operated by the owner. By inference it might be reasoned that since high-priced land contributes to increased tenancy the tenant is getting on the highest-priced land. This does not seem to follow but the contrary appears to be the case. Tenants as a group are on land of less value than that of owners. The average value of the fixed capital investment per acre for owner-operated farms is $146.72 while for tenants it is $125.65. If land alone is taken, these figures are respectively $119.36 and $110.24.

In answer to the second question, "does the renter diversify or tend more toward the single cropping system," Figure 49 should confirm what is generally accepted. As the diagram indicates, this is typically a single

FIGURE 49

RELATION OF TENURE TO DIVERSIFICATION



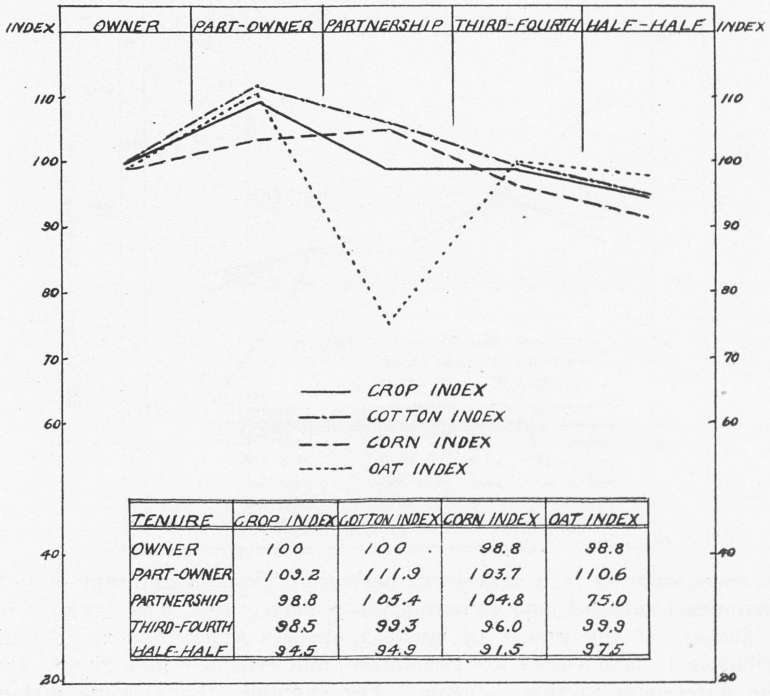
cropping system, that of cotton, but there is a noticeable increase in the percentage of land in the farm devoted to cotton from owners to half-and-half tenants. The partnership group is an exception but since it includes but five farms no very great significance, if any, can be attached to it.

There are probably a number of causes for this situation. In the first place, as has just been pointed out, tenant farms have a higher percentage of land available for cultivation. This would encourage an increased cotton acreage on these farms. The tenant himself is particularly interested in his money crop. He is encouraged both by his creditors and landlord to increase his cotton acreage. In the case of the half-and-half tenant the very high percentage is explained by the fact that the tenant has very little, if any, livestock to which feed might be fed, and the owner, in the majority of cases, requires that a certain number of acres be planted to cotton. In some instances the entire operation with the exception of small truck patches is devoted to cotton.

It has been observed that the tenant is getting onto farms whose improved acreage is relatively high, but this does not necessarily mean that he is getting onto the best or highest-priced land. In fact, the converse of this is indicated in Table 48. He is not inclined to diversify his crops, but tends towards a single cropping system. This leads us to inquire as to his relative efficiency in yield of crops with owner groups (1) per

FIGURE 50

CROP INDEX COMPARED WITH COTTON, CORN, AND OAT INDEX BY TENURE



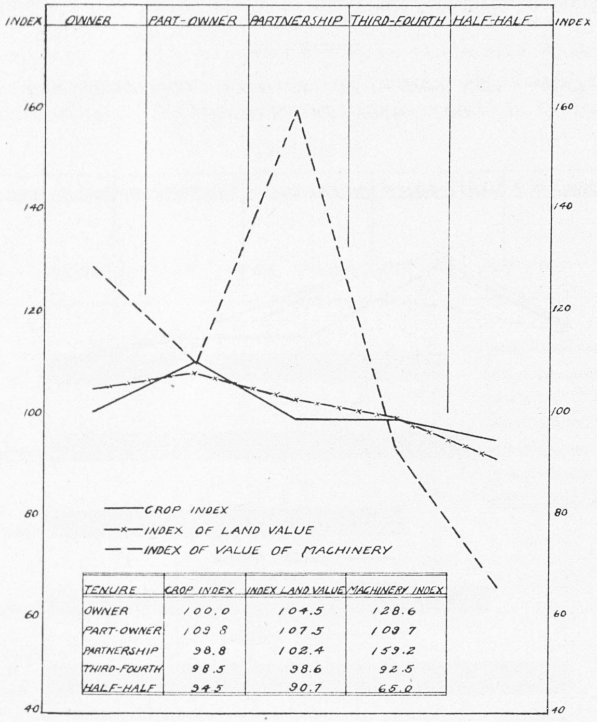
TENURE	CROP INDEX	COTTON INDEX	CORN INDEX	OAT INDEX
OWNER	100	100	98.8	98.8
PART-OWNER	109.2	111.9	103.7	110.6
PARTNERSHIP	98.8	105.4	104.8	75.0
THIRD-FOURTH	98.5	99.3	96.0	99.9
HALF-HALF	94.5	94.9	91.5	97.5

acre and (2) per operation or per man. In Figure 50, where the index for all crops is compared with cotton, corn, and oat indexes by tenure, it is very clearly indicated by the general index that the owner groups rank higher than the tenant groups in the production of physical volume per acre. If the major crops, cotton, corn, and oats be compared with this index for all crops the same thing holds true with the exception of oat production, which is low in per acre yield for the partnership group.

In an attempt to account for the relatively low yield per acre of tenants due consideration must be given to the grade and amount of the factors which enter into and influence this yield. An effort is made to do this in Figure 51, where the crop index is compared with those of land value and

FIGURE 51

RELATION OF PRODUCTION TO VALUE OF LAND AND MACHINERY PER ACRE



TENURE	CROP INDEX	INDEX LAND VALUE	MACHINERY INDEX
OWNER	100.0	104.5	128.6
PART-OWNER	103.8	107.5	103.7
PARTNERSHIP	98.8	102.4	159.2
THIRD-FOURTH	98.5	98.6	92.5
HALF-HALF	94.5	90.7	68.0

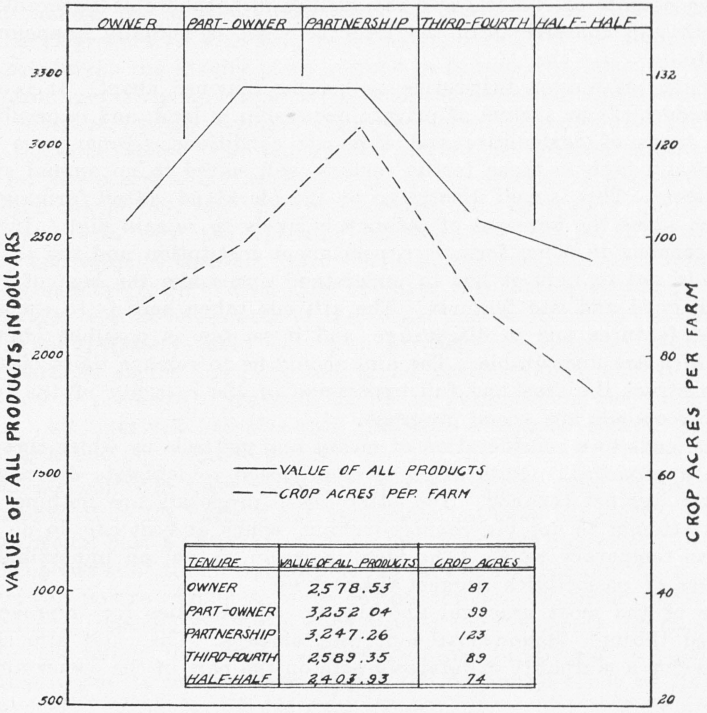
the average value of farm machinery per acre. This is significant in so far as the market value of land as here given is correct and in so far as it is a true measure of the grades of land. Influences other than soil fertility contributing to land values are recognized, and evidently give rise to some of the differences in this diagram. For example, the average distance

of owner-operated farms is 3.5 miles, and that of tenant farms 4.5 miles from market. Nearness to the market would evidently operate to cause high land values relative to producing capacity, while distance should tend to cause land values to be low relative to producing capacity.

It is of interest to observe that the crop index and that of land value show a close correspondence. In the case of the owner-operated group production per acre is relatively low to land value, but for part-owners the opposite is indicated. The production on the partnership farms is relatively low, that of third-and-fourth practically coincides with value, while the half-and-half group is relatively high. Machinery shows a tendency to vary widely. For owners it is high, coincides with production in case of the part-owner, is abnormally high for the partnership group and low for all

FIGURE 52

COMPARISON OF PRODUCTION PER FARM TO CROP ACRES BY TENURE



TENURE	VALUE OF ALL PRODUCTS	CROP ACRES
OWNER	2,578.53	87
PART-OWNER	3,252 04	99
PARTNERSHIP	3,247.26	123
THIRD-FOURTH	2,589.35	89
HALF-HALF	2,403.93	74

tenants, but noticeably low for the half-and-half group. This would seem to indicate that the owner groups make no better use of their land and equipment than the tenant groups; in fact, they may not use them as efficiently.

More light, and from a somewhat different angle, is thrown on the question of the relative efficiency of tenure groups when the production per farm is taken as a unit of comparison. In Figure 52 the average value* of all products per group and the average crop acreage per group are graphed. This shows the part-owner group to stand highest in the production of value, relative to actual crop acreage. The partnership group is lowest. The owner and the third-and-fourth groups are about on a par, while the half-and-half group is relatively higher than all groups with the exception of the part-owner group. This again seems to substantiate the conclusion just reached that the tenant groups are just as efficient in production as are the owner groups.

What Is to Be Done About Tenancy?

Evidently the first thing to be done about tenancy in Texas and particularly in the blackland belt, is to become intelligent to it. An important step in this direction is to divorce and isolate the problem in so far as possible from the propaganda of political and social reformers. Bring it down from the heights of rhetoric and the rarified atmosphere of generalities to the earth and consider it in the light of what is actually happening in daily life.

Tenancy is not an institution to become alarmed about. It is a natural product of our system of private ownership in land, and is peculiar to certain types of agriculture and economic conditions. Tenancy is characteristically high in those fertile regions well suited to an annual single-crop system. This is well illustrated by the blackland cotton farming belt. For such areas the per cent of tenancy is likely to remain high. In other words, tenancy in some form is a permanent institution and the task before us is not to fight it but to understand and make the best of it. It has both good and bad features. The attitude taken here is to encourage the good features and to discourage, and in so far as possible, eliminate those which are undesirable. The aim should be to remove those obstacles which obstruct the free and full expression of the capacity of the tenant for both economic and social progress.

This leads to a consideration of means and methods by which this ideal may be approached. Quite often it is proposed to legislate directly and absolutely against tenancy. Too often these proposals are nothing more than an attempt to apply a counter-irritant, which at best can do no more than give temporary relief. The ideal, however, is not an impossible one. A number of possibilities suggest themselves.

One of the most practical and timely opportunities for improvement is offered through landowner-tenant relationships. The chief aim should be to develop a mutuality of interests both on the part of the owner and the

*Quotations as of December 1, 1922.

Product	Market	Price
Cotton	Dallas	24.30
Corn	Kansas City	.73
Oats	Kansas City	.42
Wheat	Kansas City	1.19
Hay	Local	15.00

operator. Concretely such interests should find expression in soil improvement, crop and livestock improvement, better methods of marketing, and in fact all activities which will help to improve the farm and farm life.

It is not the hope to develop a relationship which will detract from the desire of the tenant to become a farm owner. On the contrary such a relationship should aim to offer ample opportunity and encouragement for the tenant farmer who is industrious and capable ultimately of becoming a landowner. Ownership should be the final goal. This should be an incentive and inspiration to the ambitious tenant to do his best. In the possibility he should find a satisfaction akin to that expressed by Browning when he said, "What I am not but aspire to be, comforts me." Ownership is something to strive for and the tenant who labors to make his rented farm like the farm he wants to own is much more likely to reach his goal.

The underlying principle of the landowner-tenant relationship suggested here is that of a partnership, one in which the parties concerned share in the profits made on the basis of what is contributed by each. The half-and-half arrangement is thought of as a good starting point. Under this agreement the owner as first party agrees to furnish land, workstock, machinery, productive livestock, seed and material for all improvements. The operator as the second party agrees to furnish the labor for all ordinary farm operations and repairs. In addition he would supervise or assist in the construction of any new improvements. The products grown are to be shared equally. The opportunity should be provided in the agreement for the operator to furnish a part of the workstock, productive livestock and machinery, and thereby increase his opportunity of increasing his income. In case the operator furnishes half of all livestock, machinery and supplies then his share should be increased to about three-fifths of the products grown. Where the operator furnishes everything then the share might well be one-fourth of the cotton and one-third of the grain and hay. The operator should have the privilege of keeping livestock; in which case he should have the use of all pasture lands, and all hay and grain fed to productive livestock should be furnished in the ratio of two to one. All livestock and livestock products should be shared two-thirds to operator and one-third to owner.

No attempt has been made to offer a detailed form of partnership agreement. Only the basis of the agreement has been suggested. The particulars would best be worked out for each individual agreement.

Compensation for unexhausted improvements leading to a greater security of tenure should help to lessen the objectionable social effects of tenancy. Compensation for unexhausted improvements offers opportunity for the tenant to turn his labor during the dull season to making certain improvements on the farm which the owner may not be financially able to make. Such permanent improvements as terracing, ditching, water tanks for stock, implement sheds, and the like, might better be handled by the tenant with a definite understanding that a certain compensation will be due in case the tenant is forced to move before the end of the period at which the tenant would have used up services from the improvement

sufficient to pay for the initial labor and construction costs. For example, it might be agreed that if the tenant constructed a terrace and lived on the farm for a period of 15 or 20 years no compensation would be due him. The nature of the improvement would determine very largely what period of time should be fixed.

It has been claimed that the tenure of the tenant may be made more secure and consequently this element in the population be made more fixed and permanent by the employment of a longer term contract. This is rather doubtful. England has a long-time tenure, but a one-year contract. Permanency and stability are to be secured through the terms of the contract rather than through a mere expression of time. If the terms are such that mutual benefits will be enjoyed the time element will take care of itself. Cases were found in Rockwall County where tenants had lived on the same farm for as long as 28 and 33 years.

A number of proposals have been made in an effort to discourage large holdings and make the private ownership of land more universal. Among the proposals, here are a few of the more important. First, sell land to no one but farmers. This is on the face of it illegal and absurd. Second, limit the amount of land one may own. This would meet with a great deal of opposition and before it could be applied a complete classification of land would have to be made. Such a law exists in New Zealand. This country had come to have too many gentleman farmers using their large farms in an exclusive way when it was needed in a higher use. A progressive tax has been advocated by some. This would be a gradual pressure which would tend to break up farms into smaller units. It would discourage big estates. Big estates, however, do not account for a great part of the tenancy of the country. More than 50 per cent of the owners of rented farms own but one farm. Again it is proposed that the state should own land and take part in the handling of real estate. This is in regard to lands on the margin or unproven territory. Such lands have often been settled up too rapidly, in which case not only the farmers on these but on farms in general have suffered from an over supply of certain farm products.

The most absurd and ridiculous proposal is that of land nationalization or the application of the principles of the single tax on land. This principle applied in full would mean that the value be taxed out of land and pass to the state in the form of a revenue. The right of private ownership would in reality be abolished and the state would become the sole landlord. It would not abolish tenancy, but make it complete, universal, and perpetual. The advocates of this reform are unanimously agreed as to its being the panacea for all ills, but they differ as to how it may be accomplished. The big problem is how to transfer land from a system of private ownership to that of public ownership. Land makes up one-half to one-third of the value of the country. It has formed the basis of private property for thousands of years. Not only would the agricultural industry be affected but the entire industrial fabric of the nation would be upset. Mortgage loans, insurance companies, and all loan associations

wherein land forms the principal type of security would be absolutely worthless.

There was a time when the advocates of such a reform reduced the solution to absurd simplicity; in fact, too ridiculous to be seriously treated. They reasoned that the final and absolute title was with the state and that all that was necessary to be done was for the state to step in and claim its right of ownership and notify the present owner to quit. Action of this nature was justified on the claim that the original owners stole the land. They did not go to the trouble to locate the culprit. With their assumption it was immaterial since it was stolen. This method of transference has been abandoned and a more modern method of gradual compensation offered in its stead. This it is claimed could be accomplished in a generation or two without any very serious disruption. Such reasoning is about as logical as to propose that the supports upholding a bridge may be removed so gradually that the bridge will not fall.

CHAPTER XII

FARM LIFE

This survey has purposely stressed the business side of farming, not altogether because this is one of its most neglected phases, but because of the ultimate effect of the economies to be made. Through better farm organization and management, resulting in more efficient production, the sum total of human satisfactions derived from agriculture should be increased materially. A larger farm income is desired because it will enable the farm family to have more of the worth-while things of life. Not only should it mean more satisfactory arrangements for food, clothing, and shelter, but it should also give more leisure and capacity to enjoy education, music, art, literature, and recreation.

Just here it is opportune to point out the need for further research. We know very little in a definite way about the goods and services furnished by the several types of agriculture. This raises the question, "What standard of life is furnished by the farms of the several types of agriculture in the State?" In the measuring of this kind of life both physical and spiritual well-being must be considered. It does not stop with the physical well-being secured through food, clothing, shelter, and equipment, but considers satisfactions derived through education, music, art, literature, health, and recreation. These spiritual satisfactions will necessarily have to be measured quantitatively by the money expended on them, and the time devoted to them. Information of this kind is not collected to satisfy an empty curiosity but to serve as a basis for a constructive rural life program. To know where we are should help us along the way to where we want to be. Furthermore, it should serve as a stake from which future progress may be measured. Bulletin 423, "The Standard of Life in a Typical Section of Diversified Farming," by E. L. Kirkpatrick, Cornell University, Agricultural Experiment Station, Ithaca, New York, is an illustration of this type of research.

This chapter aims to give snapshot views of the farm life of the group studied. A more specific and detailed analysis will be left for future study.

THE FARMSTEAD

The farmstead must occupy a prominent position in any attempt to picture farm life, and the farm home must necessarily form the central figure in the group. The farmstead is roughly defined as that area occupied by the farm home, other farm buildings, lawn, garden, and orchard. It is not only headquarters for the family but is the point at which teams, tools, and other operating materials are assembled. Such specialized enterprises as the home garden, orchard, and poultry are important elements in this unit.

The Farm Home

The farm home is the central figure in the farmstead group. Its location determines pretty largely that of the other units about it. A

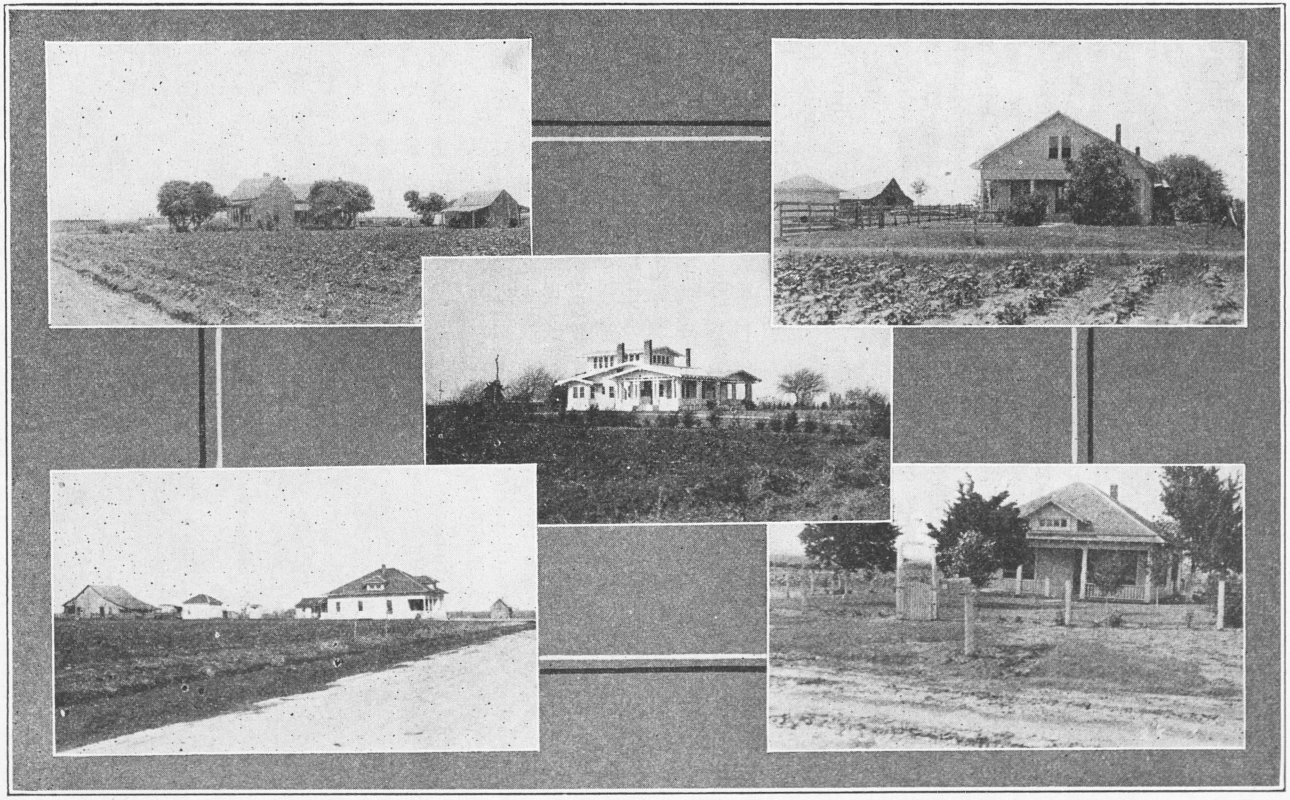


Figure 53. A group of farm homes.

home is peculiar to farming in a way not so of any other industry. In fact, the word "farm" to a farm folk is a synonym for home. This provision for a home no doubt appeals to many and is a force which attracts and holds them on the land.

Almost without exception the farm homes visited were located on or near a public highway. This is just the reverse of what was found to be true of the location of ranch headquarters*. The explanation, however, is very evident. The major, if not the only enterprise of the ranch is livestock and to have a public highway passing through the headquarters would greatly interfere with the handling of the ranch livestock. For the farm and especially the cotton farm it is different. Cotton must be hauled to the gin and to market and equipment and materials must be brought to the farm. The nearer and more convenient the road the better. Of the 500 farm homes visited, 457 were on graded roads, 36 on concrete roads, and 7 on second-class or ungraded roads.

The average distance from the nearest railway point is shown to be 4.2 miles. Only a very few farm homes were farther than 8 miles from a railway point.

Function of the Farm Home: The primary function of the farm home is to provide shelter, sufficient room, warmth, light, and sanitation to take care of the comfort and health of the family. The farm home, however, is more than a shelter for the family. It is a place where friends are received and entertained; consequently, it should provide for this necessity. Likewise, it is the business headquarters for the farm and should make provision for the preservation of valuable papers, also records and accounts which the farm operator may wish to keep. Provision should be made either through the construction of a cellar or store room for storing home supplies of various kinds. This feature is almost entirely lacking for the homes of this region.

Size of the Farm Home: There is a wide variation in the size of farm homes for the area. This is very well illustrated by Table 49. Of the 474 reporting, only two had as few as two rooms and only 77 had three rooms. The greatest number for a single-size group was 138 in the four-room group. In only two cases were homes found having more than 10 rooms. There were a few exceptions where farm homes were evidently too large. The tendency, however, was for them to be small and crowded.

Condition and Surroundings: The condition and surroundings of the farm home are not to be overlooked. They are pretty good indicators of the character of both the farmer and kind of farming. The farms here considered were classified as good, fair, and poor, depending upon the condition of the roof, walls, floor, etc. A house was classified as good whose roof did not leak, whose outer walls were weatherboarded and carried a reasonably good coat of paint, whose inner walls were ceiled, and whose

*Bulletin No. 297, pp. 414-415, "An Economic Study of a Typical Ranching Area on the Edwards Plateau of Texas," by B. Youngblood and A. B. Cox, Texas Agricultural experiment Station, College Station, Texas.

TABLE 49
Size of Farm Homes

Number of Rooms	Number of Houses
2	2
3	77
4	138
5	89
6	81
7	48
8	20
9	8
10	9
11	1
12	1

floors were tight. On such a basis 345 houses were graded good, 76 fair, and 79 poor. The classification as to surroundings noted the presence or absence of grass on the lawn, shade trees, shrubs, and flowers. There is an almost universal lack of effort on the part of farmers in this region to beautify the home by the use of grass, trees, flowers, and shrubs. Fifty-nine were classed as good, 271 as fair, and 170 as poor.

There is a sufficient number of exceptions to demonstrate what can be done to beautify and improve the appearance of farm homes in this area.

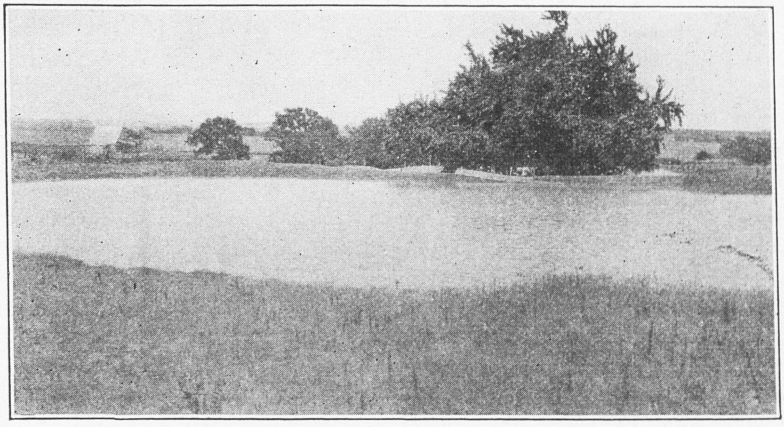


Figure 54. Open tank used for watering farm livestock. Farm of John Reavis, Rockwall, Texas. A number of farmers have found this a satisfactory method of providing water for their farm livestock.

The bare black earth may be covered with the native Buffalo grass through a little time and effort. Beautiful lawns of this grass will be seen here and there, but they are far too rare. Trees, flowers, and shrubs can be had for a small outlay of time and care.

Home Conveniences and Comforts: Sixty-one of 500 farms reported having running water, 37 bathing facilities, 6 septic tanks, 34 lights, and 58 kitchen sinks. The problem of an ample water supply is a real one for many blackland farms. During a dry fall like 1922 when the survey was made it was not unusual to find the farmer hauling water a considerable distance to supply both his family and livestock.

Automobiles were quite common among farmers. There were 313 out of 500 who had an automobile. These, when included, constituted 25 per cent of the total amount invested in farm machinery. It may be further observed that 84 per cent of all owner-operators, 74 per cent of part-owners, 80 per cent of partnership, 59 per cent of third-and-fourth, and 32 per cent of half-and-half operators owned automobiles.

The telephone, the radio, and a daily mail service have done much to add to the convenience of the farm home. Two hundred farmers had telephones, 490 had daily mail service, and 43 had a radio set. The number of radio sets has evidently increased very considerably, since at that time the radio was just being introduced on the farms.

Reading material in the home was checked as shown by the number of homes having a library, and the number and kind of newspapers and magazines kept. This inquiry showed that 414 took newspapers, 248 subscribed for some sort of magazine, and that 68 had a home library, generally small.

TABLE 50

The 12 Newspapers and Magazines Most Commonly Taken by Farmers Interviewed

Newspapers		Magazines	
Name	No.	Name	No.
Locals	336	Farm and Ranch	124
Dallas Morning News	135	Holland's Magazine	53
Dallas Evening Journal	78	Progressive Farmer	42
Dallas Times Herald	69	Comfort	34
Dallas Semi-Weekly Farm News	68	Country Gentleman	33
Farm Labor Union News	23	Ladies' Home Journal	14
Dallas Dispatch	21	McCalls	14
Dallas World	3	The American Magazine	10
St. Louis Globe	2	Saturday Evening Post	10
Ft. Worth Star-Telegram	2	Literary Digest	9
Houston Post	1	Baptist Standard	9
St. Louis Post Dispatch	1	Woman's Home Companion	7

Table 50, giving a list of twelve each, will indicate the nature of the majority of papers and magazines taken. There were many others but quite often taken by only one family. As expected, it will be observed that newspapers are more localized in character than the various magazines taken.

Barns and Other Buildings

The need of repair quite evident in the case of farm homes was much more evident in the case of barns and other farm buildings. Leaky roofs, dilapidated walls, and a total absence of paint were the glaring signs of this need. It was unusual to find painted barns and other farm buildings.

Not only were the buildings on the farm in need of repair but often there was a scarcity or lack of buildings adequate to meet the needs of the farm. For example, sheds for housing machinery and shops for repairs were scarce. Ninety-seven farms had sheds, 13 had shops, and 11 had sheds and shops, while 379 made no provision for either. The other buildings making up a part of the farmstead were the smoke house, garage, and poultry house. Of these, there were 353 smoke houses, 221 garages, and 210 poultry houses. There were more garages than poultry houses, and three times as much invested in such buildings. A number of farmers kept chickens with little or no provision for housing them.

Orchard and Garden

Home orchards were by no means universal; only 118 out of 500 made any attempt to have an orchard. Sixty of these were owners, 49 third-and-fourth, and 9 half-and-half operators. Grapes, pears, peaches, plums, and persimmons seem to do well in this area. Apples seem to be more subject to root rot. Home gardens are much more common than orchards,

Figure 55. Home orchard. H. A. & W. B. Peck, Rockwall, Texas. Peaches, pears, plums, grapes, apples, persimmons, etc., are grown in this orchard. Every farm in the blackland section should have at least a few fruit trees.

but these could be profitably increased both in number, size, and the variety of vegetables grown. Out of 500 farms, 471 had some sort of garden. These varied a great deal in value, according to estimates made by the farmers, from $5 to $200. The total value of the 471 gardens was estimated at $19,592 or an average value of $41.49 per garden.

LIFE INSURANCE

At this point a brief mention and summary will be made of the life insurance situation as revealed by the 500 farmers consulted. Life insurance has a significant relation to the standard of life of a given group of people. Its general distribution, amount and nature are an indication of the ability, desire, and effort on the part of the individuals to protect themselves and families against abnormal conditions, sickness, old age, and death. A summary of the situation is presented in Table 51.

By far the greater amount of this insurance is carried by old line companies. There is, however, a considerable amount of fraternal insurance and some local mutual life insurance.

TABLE 51

Life Insurance Carried by 500 Farmers Rockwall County, 1922

Class	Number	Amount of Policy	Average Amount of Policy	Total Cost	Average Cost
Total	275	$783,945	$2,850.70	$21,369.50	$ 77.70
Owner	68	272,300	4,004.41	7,516.31	110.53
Part-owner	22	87,700	3,986.36	2,728.31	124.01
Partnership	4	19,500	4,875.00	444.33	111.08
Third-and-Fourth	149	359,805	2,416.80	9,577.09	64.29
Half-and-half	32	44,640	1,365.00	1,103.52	34.48

RURAL SOCIAL INSTITUTIONS

The social institutions with which this survey concerned itself were the school, the church, and lodges. The attempt is made to show roughly to what extent these are used by the farm people.

The School

Table 52 shows the distribution of children in school, by families grouped according to the number of children in school. From this it is observed that the average number of children per family in school is 1.7. By far the greater number of children in school are from families which send two to five children. Less than one-half of the families furnish more than four-fifths of the children in school. One is doubtless surprised to find such a large number of families, 177, which have no children in school.

This is partially explained in the fact that 57 of the 500 families have no children at all and a rather large proportion of the tenant farmers are young and had no children of school age.

Length of Term: There is a wide variation in the length of the term. Each school district may have a different tax levy to supplement state funds. In some places a special tax is levied, which may be as much as $1.00 on the $100.00 assessed valuation, while in another it may be no more than ten or twenty cents on the same amount. For this reason there is no uniformity in the length of the school term of country schools.

Distance from Homes: As will be seen from Table 53, the majority

TABLE 52

Number of Children per Family in School

Children per Family	Number of Families	Children per Group
Total	500	850
0	177	0
1	74	74
2	97	194
3	71	213
4	49	196
5	23	115
6	5	30
7	4	28

TABLE 53

Distance of School From Farm Home

Distance to School	Number of Homes
Less than one mile	67
1	118
2	81
3	35
4	6
5	1
6	
7	2
8	2

of families were located at a distance of two miles and less from the school. Those families sending children a distance of four to eight miles were in most cases taking advantage of the high and graded schools in towns like Rockwall and Royse City.

Parents' Visits to Schools: If the number of visits paid by parents to the schools which their children were attending is a good indication of their interest in this institution, the situation is not altogether encouraging. The number of visits are shown in Table 54. This reveals the fact that there were 232 families who made no visits to 101 families who visited their schools one to twenty-eight times.

Attendance: From the reports secured one would judge the attendance to be fairly good in so far as the families interviewed revealed the true situation. There were 111 families who reported children absent one to seven days. The chief reasons assigned as a cause for such absences were bad weather, sickness, help with work, and distances. To help with work was the most common reason given.

Suggestions for School Improvements: Each farmer interviewed was asked to make suggestions as to how his local school might be improved. The response to this question was very meager. Two suggested vocational training, 15 thought they should have better buildings, three mentioned consolidation, one expressed the opinion that the school should be a social center, while one other ventured the assertion that the cooperation of parents would be helpful.

No attempt was made to check on the equipment of schools such as desks, blackboards, charts, maps, and libraries. If, however, the external appearance and surroundings were indicative of the quality and quantity of equipment inside, it would be far from ideal. There seemed to be little or no effort to beautify the school grounds. This can be shown better by some pictures of school buildings taken at random than it can be described in words.

TABLE 54

Parents' Visits to School

Visits Made Number of Visits to School by Families Having School Children	Number of Families Making Visits
0	232
1	14
2	24
3	26
4	15
5	5
6	4
7	6
8	2
9	1
12	1
15	1
16	1
28	1

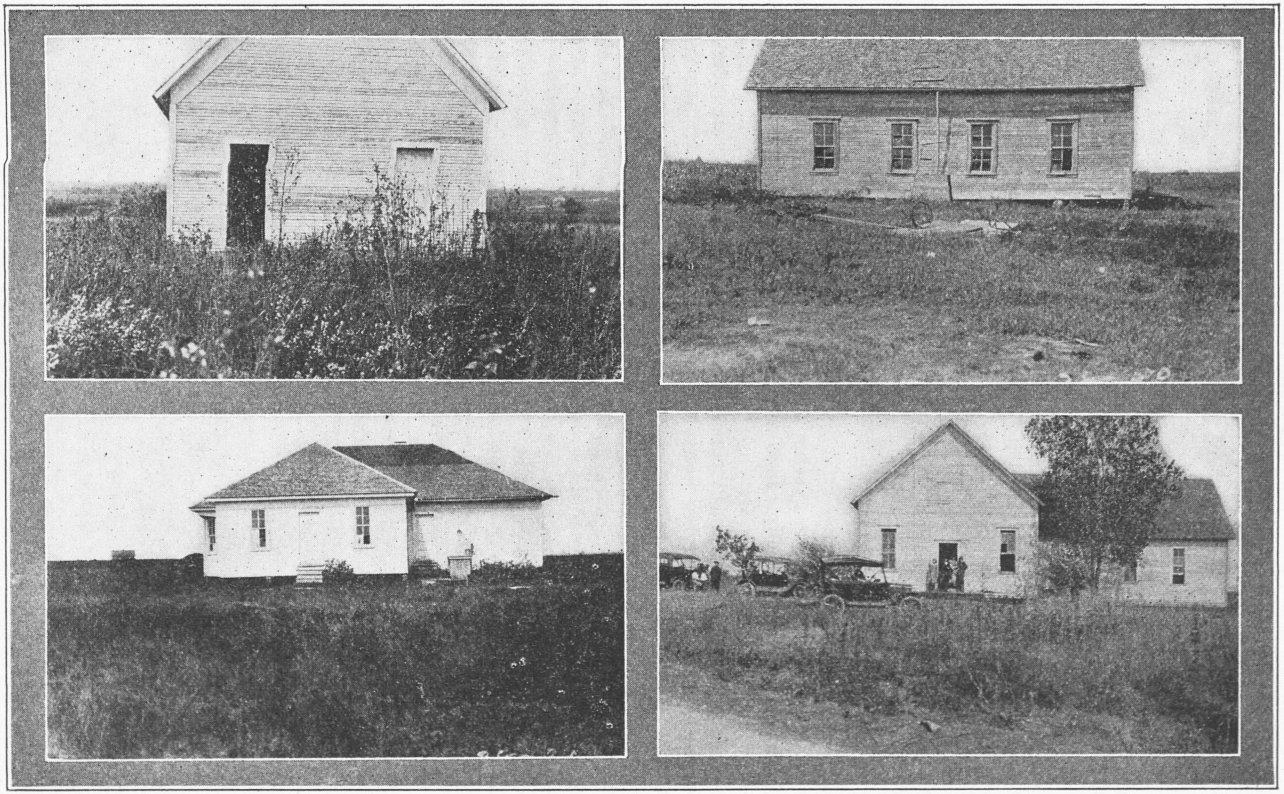


Figure 56. A group of country school houses in Rockwall County.

The Church

No attempt is made here to give a complete survey of the rural church but to suggest briefly the services which it is furnishing to its people and the extent to which advantage is being taken of these services.

There were 282 farmers who reported regular services and 35 who reported as not having regular services, 128 had a resident pastor, while 179 did not. The attendance at church services was reported as follows: 87 did not attend any, 81 attended one, 100 attended two, four attended three, and 133 attended four per month. Of those belonging to a church denomination 154 were Methodist, 174 Baptist, 46 Church of Christ, 15 Presbyterian, and four Catholic.

From the answers given, the churches attempted to sponsor very few social activities. Six reported having attended church picnics, 15 box suppers given by the church, and two having attended pictures given by the church.

Lodges

The lodge membership of this group of farmers is indicated by Table 55. From this it is evident that a relatively small number are members of any lodge.

In addition to their regular meetings two reported having attended a lodge banquet, and 13 having attended suppers given by their lodges.

Other Social Activities

In addition to social entertainment offered by the schools, churches and lodges, Table 56 indicates a rather wide range of activities, some of which, for example, picnics, barbecues, dances and parties are attended by a sufficient number to be significant. There is no organized effort in this area to provide for rural recreation. The towns of Rockwall and Royse City have small parks which are open to the public for picnics and gatherings of various kinds, and to tourists for camping.

TABLE 55

Lodge Membership

Lodge	Members
Masonic	79
W. O. W.	47
Odd Fellows	14
K. P.	4
M. W. A.	10
Other Lodges	3

TABLE 56
Other Social Activities

Activity	Farmers Answering
Picnics	196
Barbecues	32
Dances	15
Parties	22
Baseball and Football	2
Radio at Rockwall	9
Fishing	2

RELATION OF OPEN COUNTRY TO TOWNS AND CITIES

Our country and city people are equally important parts of our population. Both contribute largely to our present civilization and in this contribution have much in common out of which should develop mutual, harmonious, and helpful relationships. Farm folk are the chief producers of raw materials in foods and fibers. The surplus in these products flows from the individual farm to villages, towns, and cities for further processing and distribution. This makes it necessary for these centers of population to provide facilities for handling these products. In a cotton country these facilities would find expression in such enterprises as cotton gins, cotton buyers, banks, warehouses, compresses, oil mills, and cotton mills. The farmer exchanges the income derived from the sale of his surplus products for a great variety of goods and services used in satisfying his wants. The village, town, and city undertake to make these goods and services available and accessible. To meet this demand calls into existence the bank, the various kinds of stores, the garage, medical service, hospitals, legal advice, etc. All of these, it will be observed, are economic in character, but the relationships of country and town are not confined to the economic alone.

With the development of good roads, with the marked increase in the use of automobiles, and with the further creation and use of other communication facilities, the social contacts between the country and town will continue to increase. The country people come to these centers not only for amusement and entertainment, but quite frequently for religious worship. The latter is more especially true in the case of villages and small towns. The more we know about the factors which go to make up the relationship of country and town, and the better we understand the contributions made by each group, the sooner will petty jealousies and misunderstandings disappear. Too often these differences have been fostered and magnified to the hurt of both groups. Here again it is well to point out the urgent need of more facts. We need to know more about the relations of country and town as expressed through the services rendered. Such information can best be secured through adequate research.

Questions were asked each of the farmers visited where he bought groceries, hardware, feedstuffs, clothing, and when needed, where he went for a doctor and for hospital service. The purpose of this inquiry was to indicate, if possible, the availability and accessibility of such goods and services. To answer such a question to a degree of certainty would require a more detailed study and analysis. The answers given, however, do roughly indicate that groceries are more accessible than any of the goods mentioned. No cross-road store is so small but that it carries some of the more staple commodities of human food, such as flour, sugar, coffee, meat, lard, and various kinds of canned goods. The trade in feedstuffs, hardware, and clothing is confined to the larger towns and cities. Doctors were located at but three points in the county, Rockwall, Fate, and Royse City. A considerable number of families secured medical services in Terrell, Forney, and Wylie, nearby towns in other counties. No hospital facilities are available in the county. The group interviewed secured such services principally at Dallas, Forney, Terrell, and Greenville, Texas. The nearest of these to the county seat is Forney, fourteen miles away.

Dr. C. J. Galpin, Bureau of Agricultural Economics, United States Department of Agriculture, in an address before the annual convention of the Association of Land-grant Colleges, Washington, D. C., November 12, 1924, said: "The convertibility of farm profits into family goods is limited at the point of availability and accessibility of desirable goods. Of the twelve elements which enter into family living, desirable good food (in part) good clothing, and good housing (in part) which are made available in the United States to farmers by country cross-road stores, hamlet stores, village stores, as a regular thing; supplemented, to be sure, by distant town and city stores, are decidedly difficult to obtain in return for profits; due to the fact that the methods or retail distribution of such goods to farmers are archaic,—as archaic in fact, in many rural regions as the ox is archaic for rapid transportation." The writer is not able to say to what extent this criticism applies to the area under consideration and that of the entire blackland belt. Evidently the farm people are not entirely satisfied with the provisions made for making desirable goods available to them. There were 273 out of 500 families who claimed to have made purchases through mail order houses. No questions were asked as to why such purchases were made. Undoubtedly such considerations as price, quality, and convenience would be among the determining factors. Be this as it may, it is felt that it is a problem common to both country and town to make desirable goods available and accessible so that the farm family may have an opportunity of converting his farm income into the greatest amount of human satisfaction.

APPENDIX

TABLE IA

Land Sales of Rockwall County as Taken From Deed Records 1848-1922*

Date	Total Acres	Total Sales	Av. Price per Acre	Date	Total Acres	Total Sales	Av. Price per Acre
1922	746.37	$ 88,597.07	$119.02	1884	11,295.07	$155,398.58	$12.75
1921	1,232.35	163,196.50	132.43	1883	2,902.83	39,672.25	13.66
1920	2,008.31	299,906.95	151.52	1882	2,718.45	25,715.93	9.46
1919	2,651.21	451,807.67	170.42	1881	2,372.13	21,673.55	9.13
1918	3,501.91	385,816.41	110.17	1880	3,360.08	24,258.91	6.22
1917	2,432.16	240,205.46	98.76	1879	3,449.58	25,550.73	7.40
1916	1,863.92	185,805.90	99.68	1878	3,487.12	24,905.25	7.14
1915	2,062.83	199,747.60	96.83	1877	3,905.97	25,289.50	6.47
1914	2,169.27	202,045.36	93.14	1876	4,026.76	22,438.48	5.57
1913	2,526.31	233,421.82	92.39	1875	5,676.35	23,735.07	3.18
1912	2,680.96	179,899.60	62.63	1874	5,300.62	19,637.25	3.70
1911	2,637.12	153,982.13	58.39	1873	9,865.62	38,851.22	3.93
1910	2,470.21	141,023.87	57.09	1872	12,095.64	33,653.50	2.78
1909	2,284.64	134,823.74	59.02	1871	3,930.40	17,155.00	4.36
1908	2,484.47	132,282.50	53.24	1870	5,189.00	17,942.50	3.46
1907	2,302.77	120,321.00	52.26	1869	1,746.20	6,710.00	3.84
1906	2,039.37	100,878.95	49.46	1868	2,483.00	12,760.50	4.14
1905	2,062.52	97,330.46	47.19	1867	3,206.00	10,780.00	3.36
1904	4,234.47	143,679.45	33.93	1866	4,944.67	15,803.00	3.20
1903	2,089.80	89,119.40	42.64	1865	3,540.75	6,580.00	1.85
1902	1,758.06	71,437.75	40.63	1864	1,044.00	2,640.00	2.53
1901	2,462.44	72,843.95	29.58	1863	1,126.80	5,078.50	4.50
1900	2,561.73	77,958.50	30.43	1862	4,642.00	18,421.50	3.97
1899	2,551.57	72,929.83	28.58	1861	3,456.46	7,083.09	2.05
1898	2,307.22	62,587.50	27.11	1860	2,846.27	8,339.50	2.93
1897	2,395.35	62,924.10	26.27	1859	19,430.75	25,434.50	1.30
1896	2,098.63	52,395.10	24.96	1858	2,534.75	8,412.72	3.32
1895	2,516.36	61,529.25	24.46	1857	6,564.50	6,552.00	.99
1894	3,238.88	70,064.47	21.63	1856	1,784.50	4,748.82	2.66
1893	2,974.00	58,378.30	19.63	1855	2,482.00	3,056.00	1.23
1892	2,853.30	62,212.71	21.80	1854	1,040.00	2,525.00	1.43
1891	2,966.30	72,724.40	24.52	1853	2,402.00	2,870.00	1.20
1890	2,587.78	51,985.00	20.09	1852**	165.00	282.00	1.70
1889	2,867.22	55,949.85	19.51	1851	1,353.50	2,302.50	1.70
1888	3,640.20	67,017.40	18.56	1850	3,070.00	4,755.00	1.55
1887	2,873.80	51,138.38	17.90	1849	3,085.00	1,000.00	.32
1886	2,841.03	45,249.38	15.92	1848	1,280.00	150.00	.11
1885	3,125.24	49,074.50	15.70				

*For those years in which more than thirty sales were made only thirty were taken at random, but where less than thirty sales were made all of them were taken.

**2214 acres selling in a body for the sum of $100.00 has been left out since it seems evident that this is not a full consideration.

TABLE 2A

Correlation Analysis of Net Income

Influence of	On	Constant	Owners	Third and Fourth	Half and Half
Number of Acres pes Farm.....	Net Income per Farmer.....	n*	.3699±.0453	.4571±.0329	.6510±.0517
Net Income per Acre.....	Net Income per Farm.....	n	.7925±.0195	.4784±.0321	.4458±.0632
Number of Acres per Farm.....	Net Income per Acre.....	n	.1314±.0516	.0188±.0916	.3403±.0698
Yield of Lint Cotton per Acre.....	Net Income per Acre.....	r**	.4689±.0410	.4025±.0349	.4715±.0614
Value of Land per Acre.....	Net Income per Acre.....	r	.1651±.0511	.1402±.0408	.1178±.0778
Value of Land per Acre.....	Yield of Lint Cotton per Acre.....	r	.2691±.0487	.3766±.0357	.3008±.0718
Cash Expenditure per Acre.....	Net Income per Acre.....	r	.1319±.0515	.0091±.0416	—.1524±.0771
Permanent Improvements	Net Income per Acre.....	r	—.1972±.0505		

*The **correlation ratio** 'n' has been used where it was evident that the relation was curved instead of linear. The **correlation coefficient** 'r' best adapted to showing linear relationships whether they be positive or negative. The **correlation ratio,** on the other hand is best adapted to measuring the intensity of the relationship where it takes a curved form.

**It will be noted that the correlation coefficient is accompanied in each case by its probable error. The constants as given are not to be interpreted except in the light of their probable error. In this connection Babcock, Clausen, "Genetics in Relation to Agriculture," page 54, make this comment: "King gives the following rules for the interpretation of the coefficient of correlation according to its relation to the probable error.

(1) If r is less than the probable error there is no evidence of correlation.
(2) If r is more than six times the size of the probable error, the existence of correlation is a practical certainty.
(3) In case where the probable error is relatively small:
    (a) If r is less than 0.3 the correlation cannot be considered at all marked.
    (b) If r is above 0.5 there is decided correlation."

The rule given for 'r' applies with equal significance to 'n'.

BIBLIOGRAPHY

Books:

Ely, Richard T., and Edward W. Morehouse, "Elements of Land Economics," The MacMillan Company, New York, 1924.

Jouzier, Emil, "Economics Rurale," J. B. Bailliere & Fils, Paris, France, 1920.

Latimer, J. W., "The Wheat Region and Wheat Culture in Texas", Texas Almanac for 1859, p. 64.

Macklin, Theodore, "Efficient Marketing for Agriculture", Chapter II.

Marshall, Alfred, "Principles of Economics," MacMillan Co., London, 1916, p. 138.

Ramsey, James G. M., "Animals of Tennessee to End of Eighteenth Century", Charleston, Russell, 1853.

Taylor, H. C., Agricultural Economics (New York, 1920) Chapt. XVII, pp. 197-198.

Tiedeman, Christopher G., "Real Property", 3rd Edition, St. Louis, Mo., 1906.

Walsh vs. Preston, 109 United States, 297-329.

Wooten, Dudley G., "A Comprehensive History of Texas", William G. Scarff, Dallas, Texas, 1898, Vol. I.

Bulletins:

Bizzell, Dr. W. B., "Farm Tenantry in the United States", Bulletin No. 278, Texas Agricultural Experiment Station, College Station, Texas.

Buechel, F. A., "The Relation Between Rents and Agricultural Land Values in Theory and Practice", Bulletin 318, Texas Agricultural Experiment Station, College Station, Texas.

Hibbard, B. H., "History of Agriculture in Dane County, Wisconsin", Bulletin of the University of Wisconsin, No. 101, Chapter IV.

Taylor, H. C., "The Place of Economics in Agricultural Education and Research", Research Bulletin No. 16, The University of Wisconsin Agricultural Experiment Station, Madison, Wisconsin.

Youngblood, B., and A. B. Cox, "An Economic Study of a Typical Ranching Area on the Edwards Plateau of Texas", Bulletin No. 29[illegible] Texas Agricultural Experiment Station, College Station, Texas

Miscellaneous:

Adair, W. S., "When the Railroads Killed the [illegible] Dallas News, 1923.

Agricultural Credit Act of March 4, 1923, 67[illegible]

Geib, H. V., "Soil Survey of Rockwall Co[illegible] Agricultural Experiment Station [illegible] Department of Agricultur[illegible]

Heath, E. C., Rockwall Suc[illegible]

Ness, H., Botanist, "A[illegible] County", (M[illegible] Station, [illegible]

Report of [illegible] Climat[illegible]

U. S. Weat[illegible]